

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



eserve
-280.39
W44

WATER PROBLEMS IN THE EAST

By Dr. Frank J. Welch, Assistant Secretary of Agriculture, before
the National Water Research Symposium, Washington, D. C.
March 28, 1961

In this age of science and technology, there is a tendency to think of our national strength mainly in terms of airplanes and missiles and nuclear weapons.

Yet water is another measure of our strength. Water is so basic to our economy and so deeply interwoven into the fabric of our lives that few people think of it as anything unique, nor as a measure of national power. But water is the heart of our industry, our commerce, our agriculture, and the key to our future progress and standard of living.

Water can be our master or our slave, depending upon how we utilize it. And because it can be a powerfully destructive force, it is essential that we harness, conserve, and use it wisely.

Our concern for utilizing water efficiently becomes logically associated with concern for other natural resources -- forests and soils, for example. And thus, in our challenge of making water serve us better, we look to a growing interdependence with other conservation programs.

So it is especially good to be here to discuss ways in which we can focus our collective knowledge, enthusiasm, energy, and fresh ideas to develop our water resources to the fullest. The wide range of benefits from undertaking broad water-development plans will contribute immeasurably to the material and spiritual well-being of our Nation.

In general, we have an abundant supply of good water in this country. We also have the technological skills to insure that we need never limit our economic growth through future shortages. Our first job is to anticipate our future water needs. Then, we must work to develop the practices and techniques that will permit our increasing needs to be filled within the limits of our resources.

Planning for the future becomes complicated because our water problems differ substantially from region to region, and require different approaches. As the President's Advisory Committee on Water Resources Policy has stated, our water problems are nationwide rather than national in scope.

Let's take a look at the general water situation in the 31 humid Eastern States, and examine present and future needs and supplies. Later, we will look into a few of the many issues that need to be studied.

The East gets 75 percent of all the rain that falls in the country. Put another way, an average of 826 billion gallons of water daily find their way into Eastern streams. Unless we can find ways of getting fresh water from the oceans, increase precipitation, or reduce evapotranspiration, this is the longterm water supply of the East. Or -- more accurately -- it is the water left for use after part of the rainfall is used up, beneficially or otherwise, before the water reaches these streams.

Now, 826 billion gallons of water daily seems like an ample supply, especially when we compare it to the 107 billion gallons daily withdrawn in 1954 -- the last year for which complete figures are available for the East. And this supply seems immense when we realize that over 90 percent of the water used in the East is not used up, but is discharged and available for further use.

Theoretically, then, there was plenty of water in 1954. Actually, many areas didn't have enough. Billions of gallons of water may have been available in a river basin downstream. But this was little help to farmers and fishermen viewing a small headwater stream, knowing that it didn't carry enough water to satisfy them both. Unless you have water where you want it, and when you want it, figures on water supplies don't tell the whole story.

This brings into focus one of the East's serious water problems -- providing enough high-quality water for streams during seasons of the year when flows are normally low.

Even with the most modern methods of treating domestic and industrial wastes, we need water in the streams to dilute the waste effluent. The Senate Select Committee on Water Resources has set 4 parts per million of dissolved oxygen as a minimum for proper waste dilution. If we accept this criterion, we needed a year-round or dependable flow of 413 billion gallons a day for waste dilution in 1954. And we actually had that year a dependable supply of only 76 billion gallons a day.

This tells us what we have long known. Many of our streams are badly polluted in the low-flow season. We need to do a better job both in treating wastes and in augmenting low flows.

What about future water needs and supplies in the East?

To begin with, we are in a better position than ever before to appraise future water use -- not only in the East but throughout the country -- through the work of the Senate Select Committee on Water Resources. It's important to understand, however, that the projections

of the committee are not forecasts. They tell us only what water use will be in 1980 and in the year 2000, assuming that there will be water in the first place. And, they tell us what we must do to obtain water or to conserve it, or to transfer heavy users of water from water-short to water-plentiful regions.

By 1980, according to committee projections, water withdrawn in the East will be almost triple the 1954 level. By 2000, it will be five times the 1954 figure. Fortunately, largest increases will be mostly for cooling water for power and industrial purposes, and for recreation. In both cases, the water can be reused many times over. Nevertheless, the amount of water actually used up will also rise sharply, due to growth of agriculture, industry, and some types of recreation.

Surprisingly, the water needed in streams to maintain quality is expected to decline by the year 2000, despite a six-fold increase in industrial water use. This anticipates that we will develop increasingly effective methods of waste treatment.

By the year 2000, experts tell us, total water needs in the East will be a little over half the available dependable supply, or 433 billion gallons a day. We can judge the future storage problem when we compare this with 76 billion gallons a day available in 1954 -- when storage was already a problem.

In general, we face some sizeable challenges in meeting Eastern water needs of the future. The immediate problem is to look for ways to increase supplies.

As you know, the conventional method is storage. It becomes increasingly difficult to provide essential storage reservoirs, however, as more and more of the desirable sites are taken over by intensive residential and industrial developments.

Some of our newer methods of increasing water supplies are by hoo means of interest only to the West. Only this past February, the Department of the Interior announced construction of an experimental saline conversion plant in North Carolina.

Inducing localized rainfall can increase supplies. The President's Advisory Committee on Weather Control concluded that the best conditions for increasing rainfall are in the mountainous West. But the evidence doesn't rule out possibilities for the East.

Reducing demand will obviously relieve the pressure on supplies. Effective waste treatment substantially reduces needs for waste dilution, thus decreasing demand for water as a diluent. We need to evaluate the possibility of impounding waste effluent in low-flow periods, for release at high flow. If this can be done without hazard, storing the waste seems more economical than storing the river.

One of our pressing needs is for new methods to treat conventional wastes more effectively. We must also learn how to dispose safely of a whole host of newer waste products, such as detergents, toxic organic compounds, and radioactive materials. We have had relatively little experience in disposing of such materials.

Dramatic reductions in water intake can be brought about by recirculating the same water in a plant many times instead of using it only once. But it is the water used up -- rather than total intake -- that may ultimately be the limiting factor in the East.

On the whole, then, current technology is well geared to meet the water needs of the future in the East. And at our current rate of scientific development, future technology in this field may give us totally unexpected solutions.

In the meantime, we have some practical and important issues in the East that need to be investigated thoroughly. Let's look at some of them.

First, it's important that we continue work on all aspects of tech technology and appraise our water resources and the demands upon them. But some of the most crucial issues are in the realm of economics, law, political science, and philosophy.

Can we, for example, guarantee everyone all the water he wants? How far should we go in meeting demands and what should be the role of government? Who pays for the costs? Who should do the planning and how should we organize? How should we adapt our Eastern water laws? And are the same type of changes indicated throughout the East?

These are extremely difficult questions. The answers will have far-reaching implications in our national water resource picture.

The normal supply and demand channels of the market function admirably in providing the public with plenty of varied, high-quality goods. Some people feel that the way to insure adequate water supplies for the East is also by market allocation -- by vesting transferable property rights in water. Competition, it is argued, will then insure that water will tend to go to the most valuable uses, and new supplies will be developed as needed.

Even the strongest supporters of market allocation of water in the East recognize that public action is needed to make the water market work. Fundamentally, no market can function unless property rights are clearly defined, secure, and transferable.

The question of property rights and their transfer spotlights a serious impediment to a water market. How do you define property rights in water? Unlike iron and steel, water is in many ways an indivisible commodity. The same acre-foot is used and reused by many. How do you tell, for example, which of the thousands of downstream users have been affected by an upstream user?

Moreover, many uses -- such as navigation, flood control, and recreation -- are group uses. Some of them -- notably recreation -- are not well enough organized to express their demand for water in a water market.

Some of the difficulties of market allocation, however, can be overcome by forming associations of water users, such as the Conservancy Districts in Ohio.

Because water is so common to all, some individuals argue for allocation of water by public planning. This approach has its problems, too. None of us is infallible and mistakes can be costly. Further public allocation of water is likely to require expensive administrative machinery and public control. There are, however, all degrees of public planning, from broad policy type to detailed planning for every acre-foot. Any type of planning should be kept flexible, in view of the uncertainties of the future.

Market allocation of water and public planning aren't mutually exclusive. Public associations of water users may participate in a water market, and at the same time engage in planning.

The two approaches share some common problems. For both, the pure riparian doctrine of water law is too restrictive. The modified riparian doctrine of reasonable use, now in force in many Eastern jurisdictions, may be adequate as long as intense pressure on water supplies doesn't develop. Future changes in water law may well be indicated for the intensity of water use anticipated for many parts of the East.

We obviously cannot resolve these issues here. Besides, I suspect the same answer does not apply to all parts of the East.

How the costs of water development are to be financed is another issue that needs consideration. This applies especially to joint costs such as reservoirs used for power, flood control, and recreation. The question of financing is related to the question of who should plan, develop, and operate water projects. In the past, the job has been done by private individuals, local associations, State and Federal agencies, regional planning commissions, and regional authorities. The role that each can best play depends on local and general considerations.

Another issue needing additional study is how to spread out scarce public funds to balance our water resource development -- within the between regions -- with our overall national economy. This can be done successfully.

We don't have to look very far to see how beneficial a balanced water resource development plan can be. We have found in the classic T.V.A. pilot program in the Tennessee River Basin, that we can overcome the financial hurdles, tame our watersheds, and keep water's destructive forces from getting out of hand. We have demonstrated that water can become a powerful, efficient, and economical servant of man. The average annual flood control benefits of this multiple-use system were found to be nearly double the average annual costs. The various land-use benefits alone have been more than sufficient to amortize the entire flood-control investment, plus all accumulated annual expenditures.

All of these difficult legal, financial, and organizations issues will, in time, be resolved. But we will have to move slowly because we will be establishing precedents with each step along the way. The decisions made will have to be wise ones, to guide our future water resource development plans.

Now, what is the place of agriculture in the total picture of Eastern water use? This region has the major part of the Nation's cropland, and the lion's share of the water, and much of the future market.

As yet, irrigation has been practiced only on a modest scale, although it has increased in the postwar era. Increased limitations on available cropland and continued farm enlargement -- along with producer desire to reduce uncertainty from farm operations -- makes further inducements to Eastern irrigation seem apparent. We actually know little about the relative productivity of water in humid-land

cultivation, however. And until we find out through rigorous economic evaluations, we cannot make wise and fruitful public investments for water development in this area.

Let's look a little more closely at the figure on present and future irrigated acreages in the East.

In 1959, there were some 2.2 million irrigated acres in the East, compared to 30.8 in the West. At the present time, much of the irrigation in the East is for high value crops such as tobacco, potatoes, and other vegetables, flowers, and nursery crops.

Future Eastern irrigation was projected under three population levels. The median projection was 3.7 million acres by 1980, and 15 million by the year 2000. Agriculture would account for a considerable part of the water used up in 2000, but for only a small part of all requirements.

As we continue to use water in agriculture, however, we face a growing concern -- one that looms larger everytime we look at it. And that is the increasing competition for water for municipal, industrial, and agricultural development. We may have to face the prospect that the cost of using water for irrigation, for example, may be too high in an expanding industrial economy.

Agriculture thus has a tremendous responsibility for using water effectively. Every acre-foot of water must be used with the greatest care. This approach to effective water use calls for comprehensive water resource plan, beginning with up-stream watershed protection.

The Department of Agriculture has done considerable work in this area, along with many State experiment stations, and public and private groups. Let's look for a moment at watershed development in the East and see what we've done to increase efficiency of water utilization.

In the 31 Eastern States, 175 small watershed projects totaling more than 8.6 million acres have already been authorized. Structural measures in these watersheds -- to cost more than \$120 million -- are expected to produce annual benefits of more than \$11.6 million. Although flood prevention is the major purpose served, water storage will be specifically provided in 10 projects for irrigation, 14 for industrial water, and 7 for fish and wildlife. Drainage of agricultural land will be improved in 32 of the projects.

Continued growth and need of such projects depend on how well they meet the multiple purposes of water resource development and management.

There are other ways in which agriculture can increase the efficiency of water use. And these are the areas of greatest research needs. The Department of Agriculture is aware of these research needs and is devoting increasing time and attention to help solve them.

We are concerned, for instance, with reducing wastes and loss of water in storage facilities and conveyance structures, and in our application methods. We're trying to improve our methods of water measurement and our control equipment.

A highly significant research area is our work in improving water use efficiency by crops and animals. This cuts across the broad spectrum of agricultural research.

For example, plant breeders are searching for strains of plants capable of producing more pounds of dry matter per acre-foot increase of water than is normally possible. Entomologists and plant pathologists are developing management and control techniques that can be adapted to better water utilization and an improved agriculture.

Soil scientists are studying soil management practices that will bring about the best possible transmission and utilization of water in the soil. Agricultural engineers are investigating new equipment and water management practices to further reduce water wastes, and to increase efficiency and placement of water where it can be most useful. Legal experts are examining the role of water law in promoting efficient water use.

In short, the Department of Agriculture's role is to formulate and conduct an intensive research and education program for maximum efficient use of our water resources. Our goal is to place agriculture on a par with industry and other water users in achieving sound water uses.

There are some important economic research needs in agricultural use of water resources that bear strongly on whether or not we will be able to meet future needs. Again, these are of great concern to the Department of Agriculture.

We need much more complete data on irrigation. When compared to the systematic inventory on water use for public supplies, industry, and power, the gap is great. No criticism is implied of the people surveying our water use. It is much more difficult to appraise water use in agriculture, which involves hundreds of thousands of small users. Moreover, the cost of the information obtained must be compared to its

value. But certainly, the improvement of statistics on agricultural water use should be considered.

Similarly, we have just made a start in measuring the need for irrigation. Rainfall data alone tell us only part of the story. We have just begun to measure rainfall and water-holding capacity of soils and rates of water use for growing crops for several eastern States, to derive a measure of drought probability.

The USDA Conservation Needs Inventory currently underway will not only give us a better basis for appraising the soil resources of the East for irrigation, but also an appraisal of the needs for irrigation as seen by local people.

Whether we try to help a farmer who wonders if it would pay him to invest in an irrigation system . . . whether we wish to know what Eastern irrigation can contribute to the Nation's food supply . . . or whether we wish to compare the value of water for Eastern irrigation to its value for competing uses . . . for all of these, we need what technicians call a "production function."

This can help us predict the yield response and net return when water and fertilizer are added to some of the major soils of the East. We must have this information if we are to know the value of water in irrigation.

In summary, then, the special water-resource problems of the humid East are compounded from many factors -- but all stemming basically from the rapid growth of our population. The resulting new conditions of

vastly increased urbanization and industrialization demand completely new approaches. The present deficiencies in our water-resource program are largely due to the use of old concepts that are no longer suitable in guiding present-day water development plans.

In short, we must relate all of our concepts of water resource development to the local level and to our national growth and destiny.

#

U.S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
JAN 7 - 1966
O & R-ASE

Address by Dr. Frank J. Welch, Assistant Secretary of Agriculture before
the Eighth National Watershed Congress, Tucson, Arizona, April 18, 1961 at 10 a.m

I appreciate the privilege of speaking to this, the Eighth
National Watershed Congress.

I am impressed with your list of 27 participating national
organizations and by the large number of public and private agencies
and by the landowners, scientists, and land managers who are gathered
here. I like the vigor with which your Congress has focussed national
attention on the very place where water production and water
conservation must begin, out where our renewable resources need the most
meticulous attention--namely the watersheds.

Today, I'm going to talk about water for agriculture,
industry and recreation and the part that the U. S. Department of
Agriculture now plays and will play in the future in the Nation's
water picture.

Most Americans think of water as something to drink or to
cook and wash with. Yet, surprising as it may seem, only 10 percent
of the water used in this Country goes into domestic purposes.

(more)

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY

USDA 1146-61

JAN 7 - 1966

G & R-ASF

Fifty percent is utilized for agriculture and 40 percent for industrial purposes. When we stop to think that 9 out of every 10 gallons of water used in the United States enter into the production of food, fiber and manufactured products we cannot help but recognize water as a dominant factor in further economic development and as a key item in our production race with the communist nations. Our watersheds, ladies and gentlemen, are not only the key to our health and prosperity but they have become a vital element in our national defense. The stakes involved are tremendous.

The theme of your meeting, "Countdown on Water" couldn't be more timely. It spotlights the urgency for acting quickly to meet the pressing water needs of our people.

We are a fast growing nation. Our population is climbing at the rate of 340 persons per hour, 8,000 per day, 3,000,000 per year. This rate exceeds that of any major industrialized nation and is faster than many underdeveloped countries.

American families now have 33 percent more children than they had 50 years ago. Today, our estimated population is about 183,000,000. If present trends continue, just 39 years from now we will have to provide water for twice as many people as we now do.

(more)

And while our population is rising rapidly, our demand for water is growing even faster. This year we are using about 300 billion gallons of water per day. In 1980--just 19 years hence--we will require 600 billion gallons of usable water per day.

Now there is the need. What is the situation on our watersheds? In some respects it's good; in others not so good.

In numerous areas well managed watersheds are today producing abundant usable water for industry, agriculture and for domestic purposes. But we still have too many regions where the lack of water has become the limiting factor to further agricultural and industrial development. In a rapidly growing nation like ours, this situation can retard progress. We cannot afford to let it get worse. Most specifically here is the situation:

1. At least 8,300 of America's small watersheds--a major source of water yield but below par in water productivity--are in need of corrective treatment. Most of these small watersheds are privately owned range, crop, grass, forest and brush lands.

2. Nearly 300 million acres of farm crop lands, some of them key watersheds, are still in need of basic land practices such as terracing, strip cropping, grass waterways and other measures designed to stabilize soil and regulate surface water runoff.

(more)

3. Watershed conditions need to be improved on a large share of the 256 million acres of small privately owned timberlands which are also key watersheds. They can for example, stand better road and trail location and construction, better logging practices, and better fire, insect and disease protection. They can be further helped through timber stand improvement and the planting of understocked stands. These small forests are owned by 4½ million Americans, mostly farmers.

4. The Forest Service's long range program to further develop and improve the 186 million-acre National Forest system needs a shot in the arm. These forests which produce 2/3 of the West's irrigation water and provide water for 1800 western cities and communities are a big factor in Eastern as well as in Western industry, agriculture and recreation.

5. New knowledge is basic to progress. Not only must we learn better ways to manage and protect our watersheds but we must discover ways to make thriftier use and reuse of the water we have available. We will have to have more basic research data before we can fully accomplish this.

There's the need and there's the situation. Now what can be done about more and better water for Agriculture Industry, recreation and for numerous other purposes?

(more)

Speaking for the Department of Agriculture I can say this: If the Country is to provide the water that agriculture, industry, recreation and other users must have, we will all have to make water work for us instead of against us.

We think that this can be done by doing a better job of protecting and managing the watersheds that are in good order; rehabilitating those that are not; and making more efficient use and reuse of the water we have on hand.

We believe this is good business, for as the President stated in his Natural Resources Message to Congress, "Wise investment in a resource program today will return vast dividends tomorrow, and failures to act now may be opportunities lost forever."

The renewable resources conservation job is tremendous. Congress has charged the Department of Agriculture with a major share of the leadership required to get it done.

Fortunately, our renewable natural resources are vast.

In the 50 states we have in addition to the urban lands: About 721 million acres of pasture and range lands, 412 million acres of farm crop land, 529 million acres of commercial forest land, and 257 million acres of non-commercial forest land. Everyone of these 1,919 million acres is to some degree watershed land.

(more)

The responsibility of the Department of Agriculture in providing conservation leadership encompasses almost 70 percent of all these lands. Secretary Freeman has personally assumed this leadership for the Department and will pursue it to the fullest. I can assure you that we will work through every appropriate channel to achieve a common goal of abundant water, stable soil, and plentiful renewable resources.

In this connection, I want to emphasize this point: Although Congress has placed the Department in the leadership role, the only way the Nation's natural resources conservation job can be done most effectively is by cooperation, understanding, exchange of information and genuine team work between State, Federal, local, and private land resource people working closely with the landowners and each other in all areas of conservation. The day when the forester, the biologist, the soil conservationist, the agricultural extension agent, the hydrologist, the economist, or the recreation planner could go it alone is past.

We are a nation accustomed to viewing water in terms of quarts, gallons, barreelfuls and acre feet. I'm wondering if we hadn't better pay closer attention to water's more basic component--the tiny drop.

(more)

What happens to that fresh, clean drop of water after it strikes the earth is of deep concern to the Department of Agriculture, and I hope--to all Americans. Depending upon the respective condition of the watershed, that drop of water can be made to serve man far better than it does today.

If we landowners, resource technicians and land managers can properly manage the vegetation and other factors affecting the watershed then we can manage that drop of water from the moment it contacts the watershed. This will permit us to manage the spring, the river, the impoundment, the stream and the lake that drop feeds. We can also control sedimentation, soil erosion and, in a large measure, the flood and drought conditions that frequently result from poor management or lack of management.

The Department of Agriculture's soil, water, and other resource conservation activities are many and widely varied. A top team of Department agencies--the Agricultural Research Service, Soil Conservation Service, Agricultural Conservation Program Service, Forest Service, Extension Service, and Farmers Home Administration--are all working together with the States, municipalities, citizen associations, individual landowners, other Federal agencies and the Soil Conservation Districts toward the common goal of better use and better protection and management for the soil, water and related natural resources of the nation. This work is being done right out on the ground--on the watersheds of America.

(more)

The Department's soil and water activities to mention a few, consist of research programs for producing more water, steadier water flows, cleaner water from forest, range, agricultural and brush lands. There is research on devising ways of making more efficient use and reuse of the water we have on hand.

There is extension work in demonstrating improved agricultural, forest and range practices that affect the soil and water resources. There are soil surveys, conservation farm plans, snow surveys, windbreak plantings, forest plantings, range rehabilitations, soil erosion control, water impoundments, flood damage reduction, National Forest and National Grassland management and protection, farm pasture and woodland improvement, and numerous other watershed protection and management activities.

(more)

We are making steady, substantial progress and although we have increased the tempo of our forward movement, mounting new population demands on our renewable natural resources make it mandatory that we step up our rate of progress even more.

If you will permit me, at this point, I would like to say a few special words about USDA research. The Department of Agriculture started out nearly a hundred years ago as a research organization. It has come a long way and today research still represents one of our greatest achievements and concerns.

Our Country's commanding position in the world agricultural picture is, in large measure, the result of continuous application of advanced research findings to American agriculture. The Department is proud of the fact that its research is a coordinated joint effort with the Nation's land grant colleges and universities, farmers, private industry, citizen associations and foundations. We shall strengthen this partnership.

It takes 115 gallons of water to grow enough wheat to make just one loaf of bread; it takes up to 100,000 gallons of water to make a ton of steel; and last year there were 92,000,000 public recreation visits to the National Forests alone, most of whom in one way or another used water. There's no question about it--we need a lot of water; we will need much more. We cannot afford to wait for the countdown of 1980 to confront us. We must step up our movement today, to meet it.

(more)

Boiled down, outside of better use and reuse of the water we already have available, there are five basic ways in which we may increase the nation's water supply. They are: Interregional transfer of water, demineralizing saline waters, exploitation of deep-lying aquifers, modification of weather and last but most important of all, better management of the water, soil and the living things that grow on it for improved water yield.

At present, water from the first three of these possible sources is high-cost water; it may not always remain so, but today, it is. Modification of weather--or rainmaking as it is popularly called--while encouraging, still has a long way to go before it can be classed as a reliable tool in water production. This leaves us with proper protection and management of the soil and the plants and animals that grow upon it as the most practical, most economic approach to the water challenge of today. This is where the Department is most at home; this is where we shall accelerate the national effort. We hope that you and millions of Americans, without whose cooperation we can make little progress, will be full partners with us in meeting this water challenge.

I believe that our Secretary of Agriculture charted a clear dynamic course in the soil, water and natural resources field for the Department, when he stated in a recent speech:

(more)

"We in the Department of Agriculture pledge that we will do our part in the immense job of building up natural resources adequate to all foreseeable needs.

"We will revitalize the Nation's small watershed program to get more rapid action in meeting future water needs.

"We shall take strong and positive steps to achieve better management of small privately owned woodlands.

"We shall accelerate the work of our Soil Conservation Service in providing basic land use practices on farm crop lands.

"We shall rejuvenate the Forest Service's long-range program for the development and improvement of our National Forests.

"We shall help develop a sound and full body of scientific data to guide us in soil, water, forest and range conservation programs. While the Department's resource research program is a vigorous one, basic research data in this field still falls short of needs. I have directed that we review the requirements and fill in the gaps. This review is now under way." Unquote.

(more)

Ladies and gentlemen, these are some of the things Government can do. But I do not need to tell you Government cannot do the job alone. The task of building our resources is the task for everyone-- the farmer, the rancher, the industrialist, the economist, the business man, the scientist, and the woodland owner. It is also a task for the agricultural extension agent, the soil conservationist, the forester, the biologist and the hunter, the fisherman, the hiker, the city man. It's a task for all the millions of Americans who use our natural resources and who conscientiously accept the responsibility of leaving to their children a land better, richer, and more livable than they found it.

You and your organizations represent millions of Americans. United, you can wield a tremendously beneficial influence in the effort to see to it that our Country has enough water, of the right quality, in the right place, at the right time. I feel certain that this, the Eighth National Watershed Congress will help expand and further solidify the cooperation that it takes to accomplish this aim.

We in the Department of Agriculture have the utmost faith in the Nation's future and in the people of America. We know that undesirable watershed conditions can be prevented, they can be tempered and they can be corrected. Millions of aroused Americans like yourself, would be the best proof that the countdown on water will be successfully met. The U. S. Department of Agriculture is honored to be a part of this great effort.

- - - - -

280.37
W44

June 26, 1961
Meeting the Nation's
Science and Educational Goals -
A Challenge to the USDA--Land-Grant College System 1/
Implications of Agricultural Adjustments for Land-Grant Colleges and Universities.
Fort Collins, Colorado.

Meeting the Nation's Science and Educational Goals -
A Challenge to the USDA--Land-Grant College System 1/

It is an honor indeed to be invited to this seminar on the implications of agricultural adjustment to the administrators of the Land-Grant Colleges and Universities. It is a privilege to be here and to take part in the discussions outlined this morning by President Morgan. As a native Texan, I am happy to speak of Bill Morgan as a fellow Texan. He, like many of us, is an agricultural economist. As such, he's had both USDA experience and served 10 years as Extension economist in his home State. Today he is widely known and recognized around the world for his leadership as educator and administrator. So I am happy to join with him and with many of you who have sat with us before on similar occasions.

I want to congratulate Joe Ackerman and the Farm Foundation and the Center for Agricultural and Economic Adjustment for encouraging this seminar. Since 1957, the Center has served as the headquarters for spotlighting adjustment needs in the various areas of agriculture. I also appreciate the very fine arrangements for this seminar made by my friend, Lowell Watts.

Merwin Smith asked me to talk on a somewhat extended subject: "What Should Be the Future Interrelations Between the USDA and the Land-Grant System in Order to Achieve Our National Educational Goals?" With your permission, I'd like to change it to read: "Meeting the Nation's Science and Educational Goals, A Challenge to the USDA--Land-Grant

1/ Remarks by Frank J. Welch, Assistant Secretary of Agriculture, U. S. Department of Agriculture, Washington, D. C., before the Seminar on Implications of Agricultural Adjustments for Land-Grant College Administrators at Colorado State University, Fort Collins, Colorado, June 26, 1961.

College System. " I have done this because the Land-Grant institutions and the Department of Agriculture always have and, I hope, always will have many areas of mutual interest and concern. So any implications to Land-Grant administration brought on by the realities of agricultural adjustment also have implications to the administrators of nationwide programs for which USDA has been given responsibility. As Secretary D. F. Houston said to the 1914 Land-Grant Meeting that followed passage of the Smith-Lever Act, "We are in reality one family, working in different jurisdictions to serve the same people."

In that spirit, let us examine the present challenges to numerous cooperative programs in which we as a family are engaged. In the long history of civilization there has never been greater need for a re-evaluation of fundamental goals. No other generation has been faced with the decisions ours must make--decisions that will influence not only us and our contemporaries, but generations to come. The Land-Grant institutions have always adjusted their programs and curricula to the practical needs of the times. The present offers a crisis destined to last far longer than the crises of World War I, the Great Depression, and World War II. I know that once the Nation's goals have been arrived at, and are understood, the Land-Grant institutions will be found in the front ranks of leadership in adjusting to the Nation's goals.

Since our USDA--Land-Grant family was born, the Department of Agriculture has interested itself primarily in physical resources, renewable natural resources. The Land-Grant institutions became primarily concerned with human resources. But there never was and there never can be a distinct dividing line between the problems of

natural physical resources and those of human resources. From the beginning the Land-Grant Colleges and the Department have teamed up in helping rural people bring these resources together. This is a vital part of what Secretary Orville Freeman calls the great American success story, the productivity of the American farmer. In the writing of this success story, the Land-Grant Colleges and Universities, through the services they render in agricultural research, resident teaching, and cooperative extension work, have performed one of the most outstanding jobs of human resources development in history.

National Goals for Science

The Nation's goals for science and education are predicated on what the President's Commission on National Goals, a non-partisan body, described last winter as the paramount goal--"to guard the rights of the individual, to insure his development, and to enlarge his opportunity." The national goals presuppose the trend toward increasing populations, accompanied by economic growth, technological progress, and continuous advancement in a democratic economy.

The national goals for science are focused around greater emphasis on basic research and on the training of scientists by graduate education to do basic research. The report, Scientific Progress, the Universities and the Federal Government, contends that "The process of graduate education and the process of basic research belong together at every possible level." The report is now being studied by a group of scientists under the leadership of Dr. Jerome B. Wiesner, formerly of MIT and now President Kennedy's Special Assistant for Science and Technology.

In no area may we claim a closer and more continuous relationship between the Land-Grant Colleges and Universities and USDA than in agricultural research. Since the very beginning the Federal and State systems have been united in a common quest for scientific knowledge for "agricultural improvement." All of you are familiar with the legislative and historical record. The fact that science in the United States has now become the major influence in our way of life is attributable in no small degree to the early development of Federal-State agricultural research.

National Educational Goals

The national goals for education call for strengthening education "at every level and in every discipline." These goals have been stated frequently in recent months, in various ways. For us whose concern is in agriculture, I have not heard them stated better than in the following paragraph from a talk given last month before a USDA audience by Hon. Charles F. Brannan, former Secretary of Agriculture and a distinguished citizen here in Colorado: (I quote.)

"In the final analysis, the natural or physical resources of this earth --renewable, or nonrenewable, or in whatever form--have no significance or meaning except as they serve people. The experience of mankind over the past century and especially in the past several decades, has served to emphasize the need for developing our human resources. By this I do not mean the physical ability to do more work, but, rather, the development of our intellectual capabilities, the use of our brains to ease physical burdens, to provide more time and energy for useful leisure, and to extend the benefits of modern scientific developments to more and more people. I dare hope that one day throughout this world all persons, no

matter where they live or what their origins, may have an equal opportunity to develop their intellectual capabilities and thereby achieve a standard of living which I believe the Creator of this universe intended that all men should be permitted to enjoy." (Here ends the quote.)

Land-Grant Colleges and Universities thus, in face of their traditional leadership, will have to enhance the fullest possible attainment of our educational goals in every level of society. We need not go into such matters as the entrance into primary classroom education of scientific technologies and mechanical aids like teaching machines. They are here, and here to stay. They'll make for more competent college students in the generation ahead. We know that some Land-Grant institutions are taking the lead and are among the experimenters and innovators. We are about to witness next fall the entrance of airborne TV education in Midwestern primary schools. This is being accomplished with Ford Foundation support through leadership of Midwestern universities. But we are only scratching the surface in this great venture of mind improvement through new methods of education and communication. While private Foundations and the Federal Government, through the National Science Foundation and Title IV of the National Defense Education Act, are encouraging research for this educational evolution, the individual Land-Grant institution faces the challenge of trial and individual perfection through practical use and development in their classrooms, in teacher-training, and in extension work.

In agricultural college education, one of our greatest present challenges is to insure getting a fair proportion of talented young men and women enrolled each year. The ablest of these should be encouraged

to plan on graduate study in one of the various specialized areas of agricultural and biological research. Our colleges and universities each year are turning out about 45,000 scientists and engineers. Twice this number will be needed if we are to meet our science, educational, and related goals. A study of scientific personnel needed for the 1956-61 period made by the Agricultural Research Service showed that 1,000 new scientists in agriculture alone would be required each year. Whether that goal was reached it is too early to tell. In addition, there is a growing list of other fields where increasing numbers of skilled technical and administrative personnel with farm and agricultural college background are regularly in demand.

From my own personal experience I know that maintaining agricultural college enrollment has not been easy in recent years. The colleges have issued career opportunity leaflets and similar publicity. Committees have studied changes in the curricula offered. But still, with a few exceptions, increases in agricultural enrollment are not enough to meet the demands. The image of agriculture held by University enrollees doesn't differ much from that of the general public. A big challenge to all of us in agriculture is to improve that image. We need to put out much more information on how everyone--city people as well as farmers--benefit from agricultural research; about the agricultural colleges as vital institutions for the training of personnel for the U. S. Department of Agriculture and the Cooperative Extension Service.

Enrollment of capable young men and women is truly one of our great challenges. Another is the responsibility for recruitment of staff on the Land-Grant campus. We must develop public awareness of the need

for adequate salaries and working conditions commensurate with the functions and responsibilities of a great educational institution.

To meet the national goals for science and education also demands adjustments beyond the individual campus. An expanded program such as that contemplated for science and graduate education must find the mechanism whereby Federal funds will be distributed without endangering the fundamental goals. Seventy percent of the funds now going into scientific research and development are of Federal origin. Of this agriculture has been getting a decreasing share. ARS Administrator B. T. Shaw has pointed repeatedly to the fact that as recently as 1940 agriculture received 40 percent of all Federal research support. By 1950 this had dropped to 5 percent. And by 1960 to 2 percent. All of you are recipients of many of the grants that come from nonagricultural granting agencies. The question that concerns the President's Science Advisory Committee, Congressional Committees, and leaders of various Government agencies, is what is the most desirable longtime basis for distribution of the research grants and fellowships that become available through Federal support? Those of you who attended last year's Land-Grant meeting may recall that Dr. Eric Walker pointed out that the formula system for distributing research funds to Land-Grant institutions offered perhaps the most workable model for distribution of Federal funds in a way that did not interfere with the freedom so essential in conducting and maintaining our institutions of higher learning.

"In casting around for models on which to base these arrangements," Dr. Walker said, "we have almost completely overlooked the oldest active program of this sort in the country. Yet, ironically, it is probably

the most successful of them all. I'm speaking here of the Federal support program for agricultural research. Through this program, the Federal Government has been providing research grants-in-aid to the agricultural experiment stations at our Land-Grant institutions continuously since 1887."

We may hope that President Walker's suggestion will receive due consideration and appraisal in decisions to be made in reaching our national science and educational objectives.

A mutual challenge to administrators of Land-Grant institutions and of USDA agencies alike is to bring about a clearer conception of institutional policy. What are the objectives of the individual institutions and agencies? What are the functions of each? What are the major functions and what are the subfunctions and how does each relate to the other and to the master objective? This needs to be known and understood, first by professional and operating personnel, and by the public we serve. Such knowledge is a precondition to fostering greater cooperation between the various components, between scientists and graduate students, between economists and biologists, between research and extension, between the USDA--Land-Grant family and the farmers and general public we serve.

One of the greatest challenges facing the Land-Grant administrators lies in the development of programs for retraining those who lose their jobs through technological advancement. As science moves forward and develops new methods for taking the loads off people's backs, institutions founded to serve the "mechanical and agricultural classes" most certainly

have a primary obligation in helping workers develop new skills so they need not be on permanent unemployment relief. This extends far beyond agriculture and the agricultural colleges we know. But constant experimenting and invention are necessary to get at this problem. A current example is the Rural Areas Development Program. In order to activate the program, Rural Areas Development Committees are being established in those States not now having such committees so we may have a truly nationwide program. Organizational information is being made available to all directors of extension and agricultural experiment stations. The Cooperative Extension Service of the Land-Grant institutions will have responsibility for organizational and educational leadership in helping local leaders, private groups, State and local Government officials organize programs. The Farmers Home Administration will be responsible for coordination of USDA area development services at State, area, and county level. My friend, John M. Lovorn, Executive Secretary to the Rural Areas Development Board, has expressed the hope that the R. A. D. committees may count on the vast know-how of the experiment stations with regard to the economic resources and other details of the areas. He would like you in particular to encourage the directors and superintendents of the branch stations and outlying farms in areas where R. A. D. committees are being organized to take part as technical consultants. Plans for this program are going ahead fast. We hope that Land-Grant administrators will recognize its significance and potentialities from the standpoint of implementing national scientific and educational goals.

In less than a year the United States Department of Agriculture and the American Association of Land-Grant Colleges and State Universities will commemorate their centennial years. A hundred years ago the Land-Grant institutions were a new experiment in higher education. They were to provide opportunities for the agricultural and mechanical classes to follow intellectual pursuits. Out of this experiment came a century of the greatest advancement in scientific knowledge the world has ever seen. The Department of Agriculture, too, was a new venture. One of its principal purposes was to acquire and disseminate among the people useful knowledge pertaining to agriculture. It was natural that the two were to grow up and mature together. Since those early years of our adolescence, numerous mechanisms have been developed that should make our mutual family relationship stronger than ever before. In agricultural research, for example, we have the National Agricultural Research Advisory Committee. Two weeks ago I had the honor to preside over that committee's second quarterly meeting this year. I can assure you that the committee, as now constituted, is a live-wire group. Agricultural research, including that of the agricultural experiment stations and the Department, can have confidence that it will have a strong grass-roots representation through that committee in the councils of those considering overall policies for science. Closely related are nearly 200 technical committees incident to regional research. In the Land-Grant Association, the Division of Agriculture and its three sections are being strengthened under the able leadership of Roy Kottman. Both the Association and the Department of Agriculture have established Centennial Committees that are now organizing activities across the

country throughout 1962.

So, in reply to the original question, let me state my answer in this closing paragraph.

In order to achieve our National Educational Goals, the future relations between USDA and the Land-Grant system should continue to grow closer as they have since the beginning. Our system and our programs may require periodic re-evaluation to keep them moving in the right direction. But in agricultural research and in cooperative extension programs, we have a bond of union that has proved its merit in the productive technology it helped build.

Let us hope that the time will never come in the foreseeable future when the Federal Department of Agriculture and the Land-Grant Colleges and Universities will cease to be united in the tremendous undertaking of giving the fullest scientific and educational support to the Nation's paramount goals.

####

U. S. DEPT. OF AGRICULTURE
LIBRARY
AUG 15 1961
CAR + FRFP.

A280.39
W44
Receipt

June 27, 1961

Remarks.

at the 54th

annual meeting

of the Amer.

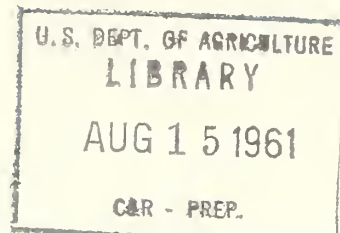
Society of

Agricultural

Engineers,

Ames, Iowa

U. S. Department of Agriculture
Office of the Secretary



One of the most significant characteristics of our age is the fact that physical, scientific and technological progress is far outrunning social, political and economic change. No recent event illustrates this fact more dramatically than the manned space flights by our nation and Russia.

But man does not yet know how to use this new power. Governments of men do not know how to control this new power for the benefit of mankind. They have developed no social instruments to control the scientific instruments that now boast such incredible precision that they can pinpoint targets on the other side of the earth. This social lag represents a dangerous gap, a gap that must be closed if men on earth are to have any hope for security against the destructive potential of the power they have created.

But what has this to do with agriculture? Your president, Professor L. W. Hurlbut, noted the relationship this morning. He spoke of another example of the incredible progress which science and technology have brought. He pointed out that the age of scarcity has passed and we are entering in this nation an age of abundance where sufficient food and fiber can be made available for every man, woman and child.

In recognizing this achievement of American agriculture, he also pinpointed another area where a dangerous gap exists. Technical and scientific progress has far outrun social and economic change in agriculture as well as in the conquest of space. And I truly believe that the

Remarks by Asst. Secretary of Agriculture Frank J. Welch at the 54th annual meeting of the American Society of Agricultural Engineers, Iowa State University, Ames, Iowa, June 27, 1961, 11 a.m. CST.

social lag represented by the gap between the abundance of food that we can produce and the extent of hunger that exists in spite of this potential for abundance may -- in the long run -- be far more significant than the gap in space.

I am sure the Communist nations with their food shortages realize far better today that to people who are really hungry, bread and milk at hand are more important than a star in the sky. To millions of men and women throughout this world the higher standards of living that can be achieved if we properly use our capacity to produce are of more direct and personal concern than the discovery of other worlds.

It is the special responsibility of those of us concerned with agriculture to close the gap represented by our capacity to produce abundantly, on the one hand, and on the other, our lack of the social and economic organization necessary to both manage and utilize that abundance.

For these reasons, I consider it a special privilege -- a special opportunity -- to meet with the American Society of Agricultural Engineers here at Ames. Our nation owes a great debt to your profession for bringing science and art in the use of material, energy and men to our agriculture.

Thanks in large part to your efforts most of our farms are mechanized. More and more farmers are using mass production techniques to produce commodities of uniform quality in high volume and at low cost. And these techniques are being continually refined.

Land is continually being reshaped and water rechanneled to expand agricultural productivity and conserve these useful and essential resources.

Agricultural engineering has not stopped at the farm gate, but has gone on to improve rural industries, and services -- the lockers, canneries, creameries and slaughter houses -- that upgrade agricultural commodities and build markets.

But with this proliferation of scientific and technical advances there has not come in step the necessary social and economic advances which will keep the farmer from being swamped when he applies the fruits of agricultural engineering to the farm. It is here that the social lag becomes dangerous.

With your help, the farmer in the past 20 years has tripled his output per hour of work. In 1941, the average farmer produced enough food and fiber to support 11 people. Today he produces enough to feed and clothe 25 other people, and these people pay less real income for it than ever before in history.

But has productive success been rewarded with economic success? Hardly. The facts clearly point to the unhappy picture of a farming economy which has been rewarded with economic distress.

Contrast 1947-49 with 1957-59:

New Jersey egg producers raised their net production per farm by 54 percent, but net farm income dropped 68 percent.

Eastern Wisconsin dairy farmers raised production per farm 42 percent -- but income dropped 2 percent.

Wheat, small grains and livestock producers in the Northern Plains raised production per farm 16 percent -- but income dropped 28 percent.

Hog-beef producers in the Corn Belt raised production per farm 36 percent -- but income dropped 28 percent.

I think it is abundantly clear that we cannot hide the shame of an economic squeeze of this proportion by pointing with pride to the fact that the number of farms grossing more than \$10,000 a year has increased in the past decade. When the farmer got through paying his bills, the net income he earned in 1960 was less than what he had earned 10 years before.

I doubt that many of the agricultural engineers of this nation would work for the hourly wages which farmers have been earning in recent years. For the period 1957-60, large tobacco farmers earned an hourly wage varying from 43 cents to \$1.07 after expenses. Hog-beef farmers in the corn belt varied from 27 cents to 99 cents an hour. Cattle ranchers in the Northern Plains earned 41 cents to \$1.07 cents an hour. And these are figures for full time commercial enterprises.

It isn't only farmers who are hurt by this inequity; the whole economy feels the pinch. Many of you are associated with firms that can verify my point -- when agriculture hurts, a lot of other people hurt, too. They feel the effects whether they live and work in the small rural communities or in the big manufacturing centers far removed from the farm production line.

The cutback in tractor production in 1960 to less than a third of the output in 1951 is an apt example. Many of the 55,000 workers who no longer have jobs in the farm machinery and equipment manufacturing industry can blame declining farm incomes for their plight.

The farm equipment industry has not had the growth rate which industry in general has shared. If we take 1947-49 as a base period for reference, the industry has not equalled its dollar volume of domestic shipments of farm equipment for this base period since 1952. And last year, the dollar volume of domestic shipments was only 60 percent of what it was 10 years earlier.

What has this done to the equipment manufacturers? Many have become part-time farm equipment manufacturers, like their part-time farmer customers. Some have gone into making road building equipment, others into diversified industrial equipment and others have opened branch plants in other nations to bring farmers there the benefit of science and technology.

I believe it is of more than passing interest to look deeper into the impact of declining income on the farmer and on the farm equipment manufacturer. It may produce some ideas we should consider in our quest for an answer to the farm problem.

As the net income of the farmer has gone down, his total output has expanded fantastically and his prices have dropped. Yet, as the income of the farm equipment industry has declined, output has dropped and prices for farm machinery have increased.

The reason for this difference is not hard to see. While there are over 3,000 firms making farm machinery, eight full-line farm machinery companies produce 75 percent of the annual domestic sales.

When 20 producers can supply the overwhelming portion of a market, it is decidedly easier for these firms to produce what the market needs than

it is for 20 out of 3,700,000 farmers to cut back production and materially influence either what goes to market or the price which it brings.

The action of an individual farmer in cutting his production is as meaningless as taking one bucket of water out of the Mississippi River. And this is the heart of the farm problem as we know it today.

It is important that we learn from the experiences which have brought us to the crossroads in agriculture, for the decisions we make today will mean the difference between taking agriculture's foot off the brake which has retarded our national economic growth or pressing down harder on it.

The first essential lesson is, I believe, that efficiency, improved practices and cost cutting -- important as they are -- are not by themselves an answer to farm income problems. The second lesson is that our job is not to stop the modernization of agriculture, but to help provide a means of improving farm prosperity so that modernization can continue.

A third lesson is that the distortions which portray the farmer as a lazy, indolent and grasping individual living on handouts will not end the farm problem -- it will only complicate the process of developing the means by which the farmer is fairly rewarded for his efficiency and industry.

Now many people assume almost immediately that any effort to increase farm income will automatically result in a sudden, sharp increase in the price of food and clothing. However, they fail to understand that the farmer's share of the food dollar is so small now -- only 39 cents last year -- that moderate increases in farm prices will have little total effect on the food bill.

If, for example, the price of wheat were increased by 20 cents a bushel, the farm cost of the wheat in a pound loaf of bread would rise only one-fourth cent. If corn were increased 20 cents a bushel, the farm cost of a box of corn flakes would rise only half a cent.

And if the program to increase farm income is accompanied by the continued increase in productive efficiency which has only begun, any increase in consumer costs because of the farmer would likely be negligible.

With this clearly understood, I want to briefly outline a five-point program which the Kennedy Administration seeks to put to work for the benefit of the farmer, the consumer, the agricultural engineer and the economic health of the nation.

First, we must seek to make greater use of both our abundance of food and fiber and our capacity for abundance. We are taking steps currently to increase the consumption of our food and fiber abroad through an expanded export program for both dollars and for foreign currency. We expect this year to break all records for both volume and value of farm exports.

We have launched a program to determine the exact nature of the world food deficit. We now have an approximation of that deficit and currently are working on the specific dietary needs of individual countries. As we develop means -- in cooperation with other countries -- for the more effective use of greater quantities of agricultural exports, these new and increasing demands on American agriculture will have to be taken into account in the formulation of agricultural programs at home. This is why an extension and strengthening of our Food for Peace program is an integral part of the agricultural legislation now before Congress.

At home we have substantially expanded the direct distribution of food to needy families in order that they may share in our food abundance and achieve a better diet. The Administration also has launched an experimental Food Stamp Program to permit needy families to purchase the food they need for an improved diet from the grocery store and supermarket directly. On the basis of what we learn from the eight projects which will be in operation for a year, we will determine whether it is feasible to expand this program nationwide.

The second phase of the Kennedy farm program is to make available fuller credit resources to the farmers of the nation. I am sure that you who are concerned with the continued modernization of agriculture recognize that a credit-starved economy cannot make full use of the inventions and improvements which you feel are vital to agriculture.

The third phase of the administration's farm program is the concentration of resources and skilled personnel within the Department in a nationwide Rural Areas Development Program. It will enable the Department to reach out and give meaningful assistance to all rural areas, especially to those of chronic farm poverty which the typical farm program does not and cannot effectively touch.

It involves both the use of low interest credit as well as a focusing of the Department's resources to provide technical assistance from all agencies of the Department to farmers and to rural communities. It is no solution to the problem to suggest that farm families who are underemployed should move to the cities. The growing concentration of population in our metropolitan areas is not convincing evidence of progress, especially when it means trading a rural slum for a city slum.

When it is practical to build up the resources of rural areas, two important gains are made: the shaky economics of small towns are strengthened and the pressure on the big cities is eased.

The fourth part of the administration's program is an increased emphasis on research to find new ways to use our farm products and to develop markets. In addition, as part of the emphasis on research, we shall continue to assist you in your efforts to develop better farm machinery for the farmer, and to increase our search into the causes and cures for animal diseases.

The fifth section of the Kennedy approach to agriculture's problems in the 1960's is to seek a realistic and acceptable means by which the farmer can adjust his production -- as the farm equipment manufacturer does -- to that which can be used at home and to meet the needs of hungry people abroad.

I believe that if the American farmers are given some assurances of relatively favorable prices and incomes in the 1960's, and if we provide a sound program for adjusting our farm output, we will have a highly flexible and productive agricultural plant -- one capable of responding to any foreseeable food production emergency.

You, perhaps better than any group of people, can understand that the technological revolution in agriculture has only begun. It is a picture of not simply general abundance, but of a rising capacity to produce food, feed and fiber. The pressure from production has only begun to be felt. This capacity should be fostered but it must also be managed in the interest of both farmers and the public.

We have asked the Congress for authority to work with farmers in recommending the best possible programs for each commodity, or commodity group, where assistance is needed and a practical approach can be developed. The proposed legislation provides farmers with the machinery for coming together and developing supply adjustment programs. It would provide democratic methods for approving or rejecting such programs. And it would specifically provide safeguards for consumer interests.

The program offers a variety of procedures, many of which have already proved their usefulness, in order to provide a degree of flexibility which is sorely needed by agriculture.

This five-point program in all but the rural area development and the research phases, is now before the Congress. I feel that at no previous time in our history has the fate of agriculture been more at stake. It is a certainty that the structure of Congress will be shifted towards the urban and city voter in 1962; and it is doubtful that as favorable an attitude as now prevails in Congress for farm legislation will again be present.

The future of the farmer, and perhaps of your industry, and the future shape of our agricultural economy is now in the hands of the Congress. It is an awesome responsibility, and they will act knowing that only history can judge the wisdom of their decision.

I am confident that we will have a farm program through which we can begin to restore health and vigor to our agricultural economy. It is of the highest importance to this nation and to the free world -- important

to peace and perhaps to the survival of our civilization -- that U.S. farmers be given the opportunity to put the agricultural house in order.

The people in your profession -- the agricultural engineers -- have made it clear that we can, if we wish, model the physical world to our desires. You have inspired us with the high hope that we also can develop effective social and economic instruments to adjust our agricultural abundance and close the gap between our tremendous productive potential and our ability to manage and utilize it in the best interest of all.

It will not be easy, but it can be done.

ooOoo

A MERGER OF AGRICULTURAL AND GENERAL EXTENSION
AND ITS IMPLICATIONS TO THE USDA--LAND-GRANT
COLLEGE SYSTEM 1/

We are now putting the wraps on the first century of agricultural education in this country. Next year we open the doors to a new century of adult education in agriculture--and one that should prove most challenging.

So let's pause for a moment to consider these important facts. Today's miracles of agriculture are rooted to happenings of nearly a century ago--the establishment of the Land-Grant College movement in 1862. Seventy-five years ago saw the start of agriculture experiment stations. The Agricultural Extension Service came into being only 50 years ago. But it wasn't until 25 years ago that we saw the first big breakthrough in agricultural production. In fact, the productivity of the individual American farm worker increased more since 1940 than in all history prior to that time.

And let's consider these facts too. The farm-urban relationship of our population has completely reversed itself in the past century--from 80 percent rural a century ago--to 90 percent urban at the present time. The dividing line between city and country no longer exists. The population is growing at the rate of three million per year. The world has shrunk--this spring one of our jet planes flew the same route as that taken by Lindbergh a third of a century ago--flying time today was less than 3 1/2 hours; Lindberg took 33 1/2 to make the trip. Technology and scientific advancements are opening new frontiers at an ever-increasing clip.

So let's take stock as we stand at the gateway to the second century of adult agricultural education in this land of ours. We note these things.

1. Although the number in farming continues to go down, the importance of agriculture continues to grow.
2. In a complex society such as ours, straight agriculture and home economics information is not enough. Farm people are reaching out to tap other areas of knowledge at our universities--such as that available from schools of business, engineering, political science, and the like.
3. Many problems of the farmer are problems of others in the community too. So there is a need today for an understanding of national and international problems, and the joining of hands to solve community needs.
4. In a rapidly changing society and with new technological and scientific advancements, we must have a continuing educational program to serve the citizenry.
5. More and more we are finding that it takes teams of scientists and other specialists to solve complex problems of today.

All of these trends are tearing down the fence between the farm and the non-farm population. We in agriculture have responded with more community-wide programs like rural areas development, marketing, and public affairs

1/ Remarks by Assistant Secretary of Agriculture Frank J. Welch at the 45th Annual AAACE Conference, National 4-H Club Center, Washington, D. C., July 24, 1961.

education. Others in the universities have been strengthening their General Extension and Continuing Education services. It shouldn't surprise us that many university presidents and boards are considering the need for one Extension Service. Such a coordinated service, they argue, would better channel all the services of the university to the farm and nonfarm people needing them.

Programs in Missouri and Utah are examples of such integrated services.

Let's consider a few of the important points in the Missouri system. Up until a year ago, the University of Missouri had two main extension service arms--the Cooperative Agricultural Extension Service and a Division of Continuing Education. Now these services and all other Extension activities of the University of Missouri have been combined into one Extension Division headed by a Dean who reports directly to the President of the institution. Thus, in addition to agricultural extension work that you are very familiar with, this Extension Division also handles the University film library, student advisement, all short courses, correspondence courses, and the like.

The hope in Missouri is to extend to the entire university what they already had in agriculture through the Cooperative Extension Service--and at the same time strengthen agriculture. Plans are to have extension specialists in all of the colleges. At the moment they already have extension specialists in six colleges.

The county agents' offices have been renamed as University Centers--with the county agent as director of the center. Assistants and associates are attached to the offices--and carry titles in line with their specific work.

While the offices are being maintained on a county basis, county lines are being ignored in the addition of new personnel in many cases. The specialists work on an area basis. And the conventionally trained agriculture specialist is not the only type of addition to the staff. Many are community development specialists, and the like.

With the combining of the existing services came the opportunity to consider the methodology being used by each service in the past. The exchange of ideas has been good. County agents are getting a new viewpoint of themselves as educators. They're injecting more formal type training such as short courses and conferences into their teaching methods. Short courses once held on a statewide basis are now moved around to areas of the state to bring them closer to the people.

What are the advantages of this integrated extension system? Dean Brice Ratchford who heads the entire program and is also director of the Agricultural Extension Service lists these advantages.

1. They can handle more different types of problems that come up.
2. They have more resources to call upon--both quality-wise and of greater variety.
3. They've become aware of more approaches to use in their teaching work--in many cases using the more formal class, conference, and short course to augment their more customary informal methods.

4. With this system they hope to become really effective in all areas of Scope.
5. As soon as they get the system into full operation they can serve all the people of the State on important problems.
6. This system allows them to coordinate the total efforts of the University more efficiently--particularly from the standpoint of use of manpower.
7. They found that this amalgamation of different extension forces has helped the Cooperative Extension staff understand education.
8. The collecting of fees and accepting of grants has opened up new opportunities for financing.
9. Also important is the fact that the top administrative officer of this new division of extension is a dean and thus is a member of the top policy group at the University--the University of Deans.

Of course, there are a few problems too. Dean Ratchford mentions these.

1. The image the people have of Cooperative Extension work--both in the big cities and the professional staff of the nonagriculture colleges at the university.
2. Distrust by the agriculture people of the remainder of the university staff--and vice versa.
3. Establishing the role of educational leadership.
4. Public relations with public schools--because of their interest in continuing education.
5. Getting qualified teachers for courses.
6. Getting all university personnel to work through the university's field offices in their contacts out in the state.

Utah has also recently consolidated its off-campus extension activities into one unit. The director of the Cooperative Extension Service was named head of the consolidated service and made responsible directly to the President. Utah established four outlying regional offices, each headed by a well-trained person with a Ph. D. degree, and eliminated the comparable supervisory positions at Logan. These persons are responsible for giving guidance to the total program in the counties in their respective areas.

Now let me build on the comments of Dean Ratchford as I add a few more thoughts about the implications of this merger on the Land-Grant--USDA system. And first, I'd like to remind you that changes bring both problems and opportunities. Our viewpoints and attitudes have much to do with how effectively we capitalize on any new set of conditions.

Obviously, this amalgamation of interests gives greater breadth of program--more resources--and a wider assortment of teaching methods. On the other hand, there is greater opportunity to bog down in detail unless these greater opportunities are wisely managed and directed.

As extension workers, it's our job to extend information to others. Agriculture has had a wealth of experimental findings from state experiment stations and USDA, as well as from industry. I doubt if some of the other areas the combined Extension Services are now dealing in are so fortunate in having this backlog of solid research findings at their own institution or in government. So we may see these disciplines draw more heavily on findings from industry.

There is also the possibility that in this broad program and organization set-up, the Cooperative Extension Service and county extension agent as we've known them will lose their identity. Those of you in communications can appreciate the trademark value of the Extension name with farm people who know what it has done for their area. No doubt we need to do more to tell the farm success and farm contribution story to the rest of the population.

What kind of personnel does it take in this new type of Extension Service? We'll undoubtedly see more nonagriculture trained persons on our state field staffs.

Administratively, these new all inclusive extension divisions will undoubtedly report to top administration at the university--probably the president. This could mean that unless watched closely, the agricultural sector of the extension division could lose its present close ties with the ag school and experiment station.

To the extent that you lose these close program, subject-matter ties, you in communications may have to be more sure that you keep your efforts on an educational, program support basis rather than become institution promoters.

In any program representing different areas and interests, but supported by specific funds, there's the matter of administration of the funds for the purpose intended. This obviously will be a concern of responsible officials in the agricultural extension service.

Congress may find it wise to appropriate specific funds for other types of extension work--for general extension, for urban work, for labor. Obviously, this could further complicate the administration of the moneys--with these funds going into a single extension division at the State level.

Then carry this one step further. If these appropriations were made, might Congress then consider it wise to have all extension funds administered through one existing department or new department?

This last point could be significant from this standpoint. Unless carefully watched the agricultural sectors of the overall extension divisions could drift away from present close ties with the researchers in USDA and at the state experiment stations.

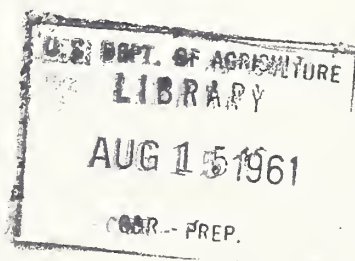
In conclusion, it seems logical that a single integrated extension program emanating from a state university could more effectively serve the citizenry of the State. Furthermore, the people could be served with broader programs.

Agriculture would be a part of this much broader program designed to serve all the people. There is no reason why this amalgamation of services into one

should weaken agriculture. But it would require close attention to see that agricultural extension does not lose its close ties with agricultural researchers of USDA and the state experiment stations.

The make-up of society has changed sharply, and will continue to change. The sole purpose of extension is to serve that society. So we must adjust to meet these changes. You in communications have a special challenge to help make those adjustments and to help explain what they are and the need for them to the public.

####



280,39
144
Aug. 21, 1961
Cooperatives in Agricultural Policy
Minneapolis, Minn.

THE ROLE OF COOPERATIVES IN AGRICULTURAL POLICY AND PROGRAMS

The role of cooperatives in agricultural policy and programs is an interesting and important one. This subject may be considered from several angles. I propose to discuss it from the following approaches:

(1) Cooperatives' role in the formation of agricultural policy and agricultural programs to implement the policy; (2) their role in operation or execution of farm programs; and (3) their role as an integral or important part of agricultural policy itself.

Formation of Agricultural Policy and Programs

I would like to comment briefly on what cooperatives might do in policy and program formation. Farmer cooperatives are economic or business institutions owned by farmers to perform various services. A one-commodity marketing cooperative may be quite influential in influencing agricultural policy and programs pertaining to that particular commodity, since it represents the views of many producers and often an important segment of that commodity. A diversified marketing and purchasing association usually finds it difficult to take a firm and positive stand on some agricultural policies or programs. Its members may have diverse viewpoints as a result of differences in their production interests.

A cooperative undertaking to help formulate policy and legislation for a farm program puts itself in the place of a general farm organization. As such, there is some risk of hurting its primary activities. However, if a large majority of its members feel strongly on a policy or program they may overcome this risk by providing funds for a separate farm organi-

Address by Dr. Frank J. Welch, Assistant Secretary of Agriculture, before the American Institute of Cooperation, Minneapolis, Minnesota - August 21, 1961

zation or an overall commodity organization to advance their ideas.

A cooperative can perform a helpful role to both its members and policy formulators by providing realistic and objective information on policy and program. Information pointing out the advantages and disadvantages of a proposed policy or program may have considerable indirect effect on the type of policy or program that will eventually be developed.

Farmers, like other citizens, are concerned with everything that helps to make our government effective and our country prosperous. I firmly believe that cooperatives must take a stronger role in farm policy. They must develop in the minds of people the idea that through cooperative action many farm problems can best be handled. There has been too much tendency to consider farm policy as something apart from farmers and their cooperatives. Most books on farm policy deal largely with government programs relating to agriculture and contain few, if any, references to self-help through farmer cooperatives.

Operation of Agricultural Programs

Cooperatives, as agencies of farmers, have been active and effective in helping to operate or execute various agricultural programs adopted by Congress. For example, in the field of adjusting production to consumer needs they work closely to develop market order provisions pertaining to milk, fruits, and vegetables. In other instances, they handle crop loans and provide storage services for both farmers and the Commodity Credit Corporation. Agricultural stabilization corporations are cooperatives that have been established for the marketing of tobacco.

Soil conservation districts are a form of cooperative with activities carried on in cooperation with the government. Farm supply cooperatives supply seed and fertilizer for farmers under the Agricultural Conservation Program. Farmer cooperatives have been the main media for handling test demonstrations of fertilizer for the Tennessee Valley Authority.

Cooperatives as an Integral Part of Agricultural Policy

Farmer cooperatives have long been recognized in the agricultural policy of this country as means by which farmers can improve their income. Agricultural policy can give specific recognition to the ability of farmers to help themselves through cooperation, a recognition of vital significance.

A favorable legal climate for cooperative development and growth is a most important part of agricultural policy. As our economy changes there is a continuing need to insure that the legal climate remains favorable for adequate cooperative development.

Research on cooperative marketing and buying is another activity where the Government has a policy. It was first established in the Department of Agriculture in 1913 and became a definite program with passage of the Cooperative Marketing Act of 1926. Research by land-grant colleges and other universities has been encouraged as part of this program.

Recognition and support of cooperatives have been given by both major political parties, and each President of this country for many years. Congress, too, has supported these policies with important legislation including income tax provisions and the Capper-Volstead Act. Likewise, every State in the Union has agricultural cooperative laws.

Two areas where cooperatives are dominant parts of agricultural policy are credit and electricity. Government took the leading role through the Farm Credit Administration and the Rural Electrification Administration in establishing local cooperative associations for handling credit and providing electricity.

Agricultural agencies and leaders now generally recognize that cooperatives have an important role in improving farmer income. They believe that cooperatives give farmers countervailing power to bargain effectively in the market place in this era of increasing corporate bigness. Likewise the cooperative acquiring of production supplies and essential services helps farmers reduce costs and thus realize more net income.

I believe more emphasis should be given to the cost side of agriculture in both farm policy and farm programs. Much is said about the cost-price squeeze on farmers from time to time but farm policy and programs have been largely directed at the price side of the pinchers. Farmers can reduce costs by two principal methods: (1) by individually improving their production efficiency; and (2) by cooperating in the buying and manufacturing of production supplies and equipment, and in obtaining needed services.

As I have observed cooperatives over the years, I have been impressed with the help they have given farmers on problems of farm management. Cooperatives can help farmers improve their operating efficiency. Their managers and fieldmen can counsel with farmers on good crop practices, feed and farm management operations. They can and do work closely with the State Agricultural Experiment Stations and Extension Services in getting recommended practices put into operation.

Cooperatives can reduce the cost of the individual farmer by efficiently selecting, purchasing, or manufacturing the type and quality of production supplies and equipment that will give him the greatest value in use.

In the field of integration in agriculture, especially contract farming, farmers will look more and more to their cooperatives. Cooperatives can provide farmers with organizational devices to insure that integration is carried on for their benefit. Any savings made possible through this integration necessarily belongs to the farmer as the integrator.

A major objective of agricultural policy and of farmer cooperatives is to increase the income of farmers. This identity of purpose opens the way for references in my discussion to principles of sound organization and operation which cooperatives must follow if they are to be effective instruments for participation by the farmer in agricultural policy and programs.

At the outset it is important to recognize that cooperatives benefit all farmers, whether or not they are members of the cooperative served. Cooperatives, by performing services at cost, serve as important watchdogs over margins in a marketing economy characterized by small numbers of large firms, where price decisions of any unit may become the immediate concern of all.

One of the recurring problems of farmers is over-production. We know that cooperatives cannot entirely solve this problem, for they do not have the means to control the supply of a commodity -- and of substitutions for the commodity.

A cooperative can be a very stabilizing force in the market, however, in administering the supply furnished by its members. When carried on as a part of an industry program through marketing agreements or orders the leadership of cooperatives have shown that they can perform an important role by representing producer interests. This has proved to be an effective means for increasing farmer bargaining power.

In furthering the economic position of farmers, many cooperatives have performed an invaluable service for their members in finding market outlets. A striking illustration is found in the case of Sunkist citrus, but there are many other agricultural areas that owe their place in the sun to the outstanding job done by their cooperatives in finding market outlets.

It is true that not all cooperatives are pacesetters -- but it is also true that many of the pacesetting innovations in marketing farm products or purchasing farm supplies have come from them. Traditionally cooperatives have been organized if performance by other business enterprises results in excessive margins or inadequate services. With efficient cooperatives present, competing firms must render equivalent service at reasonable cost to survive.

Today's mass distribution calls for, and requires, large volumes of products of uniform quality and in continuous supply. Cooperatives must meet this need for specification buying.

To some extent cooperatives can meet these requirements by adjusting their pooling and other grower payment methods. By properly adjusting premiums reflecting qualities demanded by buyers, payments to farmer-members can influence farmers' production plans and practices. Quality control -- from the production level through the various marketing processes is a basic method by which cooperatives can help tailor market supply to market demand.

Contracts between grower and cooperative can also be used to adjust the supply of members' products to market potential. Strong membership contracts can give the management of cooperatives another way to develop the bargaining power that lies in the joint sales of members' products. Along with contracts, membership education in their use and need is vital.

It is necessary that limitations of cooperatives in dealing with problems of agricultural stabilization be recognized. Cooperative leaders know that the problems of agricultural stabilization cannot be handled by cooperatives alone -- but they know that farmers through their cooperatives can help in solving some of these problems. In many cases cooperatives have been able to perform many services that would otherwise have led to government programs. Farmers through their cooperatives have insisted on the use of the self-help principle for they believe that this makes for a virile system of farming. Farmers know that if cooperatives do not meet the challenge they must of necessity turn to Government.

As farms grow in size and become better managed business units will farmers turn away from farmer cooperatives? I do not think so -- although we can assume that more will be expected of cooperatives than in the past. They will need to increasingly demonstrate that they are operating with maximum efficiency in behalf of their farmer members, but I see no compelling reasons why they cannot meet this challenge.

If cooperatives are to measure up to these requirements, planned, careful expansion is required. Cooperation must gain more understanding by the public for their efficiency and service. Many cooperatives have earned such an enviable reputation. Many others are seeking it, while others have only begun to see its importance.

Management -- directors, managers and staff -- need to keep continually informed on technological developments in their commodities as well as on day-to-day changes in the market. But even more important, they must take the time and use the resources necessary to "research out" information on long-run trends and changes in the marketing of their commodities, on competing commodities, and on the economy in general. In other words, bargaining power cannot be fully developed without knowledge and information. Cooperatives can obtain much of the required information themselves, but often outside help -- such as that of market research organizations, the Extension Service, the State Colleges and Departments of Agriculture, the Agricultural Marketing Service, and the Farmer Cooperative Service -- can contribute.

Our topic deals with the role of farmer cooperatives in agricultural policy and programs. I sometimes wonder whether we have comprehended the potentials of cooperative organization in these areas of activity and in building a stronger nation. Hasn't there been too much inclination to look upon cooperation as simply a means of buying and selling rather than as a way of organizing the business interests of our family farmers? The small local cooperative has served agriculture in the past, but perhaps the new frontier for cooperatives is to view problems on broad regional and national bases. If, for example, we have undertaken too small a job in the past, this may explain why we have failed to do a larger job. People's imaginations are not caught by small goals. The problems of today certainly go beyond the borders of the small local cooperative. If cooperatives are to assume this responsibility they must give more attention to planning, financing, management and research than they have in the past.

As farmers become organized into stronger cooperatives these organizations can exert more influence in representing the interests of farmers. This does not mean that they can develop a monopolistic control over supplies, but they are in better position to tailor supplies to market needs and to take advantage of bargaining opportunities. They can be stronger forces in collective bargaining because they are significant organizations speaking for and serving farmers.

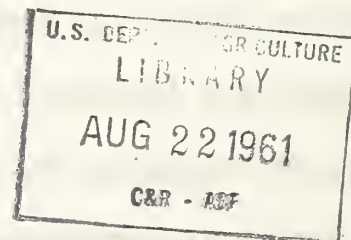
I have always believed that as far as possible we should help farmers build dynamic organizations through which they could help themselves. This seems to me to be farm policy just as much as any other kind of action is farm policy.

This brings us to the key question of whether farmers have enough confidence in cooperative business methods to realize their full potentials. It is becoming more generally recognized that farmer cooperatives are a necessary means of preserving the individual family farm as modified to meet today's larger requirements. The growth of large organizations with whom farmers must deal, contract farming, and vertical integration are making farmers and farm leaders think. This is all to the good. Farmers are beginning to see that they do not have to permit themselves to be integrated into someone else's business. They can build integrated organizations as well as others and keep for themselves the benefits of the integration.

There are important signs that give strong support to the view that farmers do recognize the possibilities of their cooperatives. Observe the rapid growth in bargaining cooperatives; the merging of many cooperatives to gain efficiency and strength; the increasing demand among farmers and

their leaders that cooperatives join forces and work together on coordinated programs; the intensification of steps toward further vertical and horizontal integration; the strengthening of our banks for cooperatives under a program which is making them farmer-owned and controlled; the greater recognition of sound principles of organization and operation, better management and better member and public relations; the increasing interest in director performance. All of these things are most encouraging, as is the increasing attention being given to cooperative business by farm journals, economists and farm organizations.

As cooperatives work further toward their potentials in discharging their roles in agricultural policy and programs, I look forward to the time when stronger cooperatives will mean a withdrawal of government from functions no longer needed and the presence of a more self-sufficient, self-contained, self-reliant agricultural industry.



A MUTUALITY OF INTEREST

Mr. J. H. H. H.
Mr. J. H. H. H.
OCT - 1961

I appreciate this opportunity to talk to the State Foresters of the Nation. As Dean of the School of Agriculture and Director of the Experiment Station and the Extension Service at the University of Kentucky, and as a Director of the Tennessee Valley Authority, I worked with quite a number of State Foresters. Also, since my move to Washington, the Forest Service never lets me forget the important part the State Foresters must of necessity play in protecting and managing our forest land. So I am not a stranger to the work you are doing. However, this is my first chance to meet and talk to all of you.

I was especially pleased to receive an invitation from Dr. Al Folweiler. I have known Al for a great many years, have been closely following his career, and am mighty proud of his accomplishments. His selection as President of this organization is also confirmation of your confidence in him.

First, I would like to assure you that the present Administration in Washington has a vital interest in all phases of conservation, including forestry, although this assurance seems to be in the nature of carrying coals to Newcastle. Those of you who attended the meeting of the Society of American Foresters in Washington last November will recall the telegram from President-elect Kennedy expressing his support for forestry. The remarkable aspect of the telegram was that it constituted the first public pronouncement of the new President.

Address by Assistant Secretary Frank J. Welch, U. S. Department of Agriculture, at the annual meeting of The Association of State Foresters, Macon, Georgia, October 2, 1961, 10 A.M. (EST).

All of you are, I am sure, familiar with the President's messages to Congress on Natural Resources and on Agriculture, in which he reiterated his interest in and support for forestry. And this interest and support are shared by Secretary of Agriculture Freeman. In a speech before the National Water Research Symposium in Washington last March, Secretary Freeman had this to say: "We in the Department of Agriculture pledge that we will do our part in the immense job of building up natural resources adequate to all foreseeable needs." Continuing, he stated: "We shall take strong and positive steps to achieve better management of small privately owned woodlands. We shall rejuvenate the Forest Service's long range program for the development and improvement of our National Forests."

So you see there is a mutuality of interest between the Department and the State Foresters. We are both traveling toward the same objective; we are both traveling the same road. The important thing is to make sure we are traveling together.

One of the things we in the Department are particularly interested in is the multiple use concept now being so ably promoted by the Forest Service. Because the demands upon all forest land and particularly on all public forest land are increasing so rapidly, it is imperative that the multiple use concept be understood and be made to work. While it might be nice to assign to each individual class of users a certain section of public land for their sole use, we know this is impossible. And you know it is impossible on State forest lands. So I urge you to continue promoting the multiple use concept on lands under your jurisdiction with renewed vigor. By working together -- the Forest Service on National Forests and you on State Forests -- I'm certain that we can get better

public understanding and support of our efforts to "stretch the forest acres" through multiple use management.

But the field in which our mutuality of interest is most striking is that covering the protection and management of private land, especially the small ownerships. I know there are many agencies, both private and public, interested in the small ownerships. All of us fully appreciate the work the forest industries and the consulting foresters can do, and are doing in this field. They are making real contributions. However, I am convinced that if we are to get the job done, the Department of Agriculture and the State Conservation agencies will need not only to furnish the leadership but to bear the brunt of actually doing the work. Therefore, we in the Department firmly believe that what is needed to get the job done is a strong Forest Service at the national level and 50 strong Conservation agencies at the State level.

Now, what is needed to keep on strengthening the Forest Service and the State Forestry agency? We know that interest on the part of high officials in government, both Federal and State, is important, but this interest must be shown in more ways than words. It must be followed by action, and action is what we have been getting from the present Administration during the past ten months.

Fortunately, during the present fiscal year, the Forest Service will for the first time have funds that will make it possible to approach the projected schedule and indicated needs of protecting, managing and developing our National Forests. We are also moving ahead rapidly in the field of research. You are all familiar with the new research laboratories now under construction or planned for construction during the next twelve months. These will benefit all forestry agencies. I am happy to report

that this expansion in research facilities of the Forest Service is especially rapid in the fields of insects and disease, and in protection against fire. These are the areas in which this Association, through resolutions, has shown a particularly keen interest during the past few years.

And, of course, of very great importance to you is the fact that after a long, long fiscal drought, Federal increases have been made in the cooperative funds which the State Foresters administer. Here is self evidence that the Federal interest is being expressed in something more tangible than words.

This is a two-way street, however. The States also have a responsibility to maintain their interest and intensify their action on these cooperative programs. I am well aware that the States have been responsible for most of the progress that has been made during the past ten years, and I think you should be complimented. As a Kentuckian, I am especially proud of the progress Gene Butcher has made in Kentucky during the past five years. But I have been hearing disquieting reports that in a few States, State officials and legislators are planning to reduce State support as additional Federal support becomes available. This concerns me deeply because it is not the path to continued progress. The job of protecting and properly managing the small private woodlands of the United States so urgently needs attention that now is no time to stop and indulge in a philosophical discussion of what is a fair share.

I am thoroughly familiar with budget ceilings and legislative committees at both the National and the State levels. I am fully aware of the tremendous demands for funds from all sources at all levels of government. But somehow, together, we must get across to those responsible for the fiscal integrity of our governments some concept of the size, importance, and

urgency of the job facing us. Possibly our best argument is that while we as a Nation must inevitably pay for our past sins of abusing our natural resources, forestry programs offer the great advantage that every dollar spent in this field of forestry is an investment in the future; and the investment will eventually reward the people in our States who need it most with more jobs and a better standard of living. Certainly, this is a goal worth striving for.

Progress in any field usually comes in spurts. This seems to be especially true in forestry. Last week, Secretary Freeman, Chief McArdle, and your President Al Folweiler joined a large number of other people in commemorating the 50th Anniversary of the passage of the Weeks Law. The Weeks Law was of course important in its own right, but it also marked the close of what could well be called the golden era of forestry. That was the era when the National Forest system was set up and expanded; when the Forest Service was established; when the Federal-State cooperative approach was first attempted. During that era, a need existed, it was recognized, and leaders like Theodore Roosevelt and Gifford Pinchot, with help from many other people, did something about it.

The next great step in forestry occurred during the administration of Franklin D. Roosevelt. Again a need existed, it was recognized, and again a leader with much help from every State in the Union, did something about it.

Today, we could well be on the threshold of a third giant step in forestry. The need exists, it is well recognized, and I am hopeful that future historians will be able to record that we, too, did something about it. There's no question about it -- our success in meeting this need will be in direct proportion to the effort we are willing to put into it.

I have heard the argument that we can take care of the problems of our small ownerships through education and demonstration alone. I doubt whether any educator or extension worker has made that statement. But there is a danger here. Presumably in the hope of counteracting this philosophy, I have noticed a tendency on the part of some persons responsible for other types of programs to downgrade the importance of education. Both philosophies are fallacious. Educational programs and service programs are complementary to each other. Unless those responsible for education search out what motivates people to do certain things with their woodlands, and where necessary find ways of redirecting that motivation, service programs will fall far short of achieving their goals. The extension man and the program administrator must be willing, working partners to get the maximum results for every public dollar spent.

I am glad to see that both the Extension Directors and the State Foresters recognize the complementary nature of their programs. You will recall that the Extension Directors have set up a Subcommittee on Forestry; that this Subcommittee has met with your Executive Committee; and that from that meeting have come a number of recommendations leading to closer collaboration between the Extension Service and the State Foresters. These recommendations are sound and constructive. The Extension Service is willing and able to be of real help.

I am not going to bore you with a lot of statistics. You know better than I how many acres are in need of planting and timber stand improvement; how much intensification we need in our efforts to protect our forests against fire, insects, and disease; how much technical advice is needed. Certainly, it is a tremendous job. But it is a tremendous opportunity as well. You cannot do it alone; no one can do it alone. It will take the

stepped-up teamwork and effort of all of us. So I urge you -- be not appalled; be not dismayed. Set your goals high and move boldly to achieve them.

We are living in an accelerated age. Our timetables are compressed; our needs are developing earlier and faster than in the past. The time to give it everything we have is today; tomorrow our effort may be too late and too little. Sure, the task before us is massive, but it will never be done adequately until we join together as a team to see that the job is done.

It is well to remember that this responsibility is a challenging one that must not and cannot be ignored.

* * * * *

280.39
044
1/14/61
Reserve

USDA-Land-Grant College Working Relationships
Through the Years 1/

U.S. DEPARTMENT OF AGRICULTURE
DEC 15 1961

It is indeed a pleasure to join with you, the people with whom I have worked closely for many years, in this important annual meeting of the Division of Agriculture. As a member of Secretary Orville Freeman's official family, let me, first of all, extend to you the greetings of the Department of Agriculture.

On this eve of the Centennials that commemorate both the signing of the Acts creating the Department of Agriculture and the Land-Grant Colleges, we have reason to rejoice over the long-standing mutuality of interests that have existed and the scope of accomplishments in which we shared. The official ties established during these first 100 years have had much to do with bringing about what has so effectively been called the Scientific Revolution. We have been taught that the seeking of knowledge and the teaching of knowledge can be put to work to help produce the primary goods needed for basic human wants.

On May 15, 1862, President Abraham Lincoln affixed his signature to the Act creating the Department of Agriculture. A few weeks later, on July 2, 1862, he signed the Land-Grant Act. Since then the Land-Grant institutions in their respective States have risen to great prominence beyond agriculture. Likewise, the Department of Agriculture's program now includes many functions that extend far beyond farm technology.

1/ Address by Assistant Secretary of Agriculture Frank J. Welch, at the Annual Meeting of the Division of Agriculture, American Association of Land-Grant Colleges and State Universities, Kansas City, Missouri, Monday, November 14, 1961.

USDA 3714-61

We realize that the lines of demarcation between rural and urban society have become so blurred that frequently town and country can be identified no longer. Such rural-urban growth, however, makes it even more important that the Land-Grant Colleges and the Department of Agriculture formulate programs that will improve people's living standards irrespective of boundaries.

Sympathetic Understanding of Mutual Aims

In 1889, Dr. Wilbur Atwater, the first Director of the Office of Experiment Stations said:

"If the Department is to help the stations, it must be in sympathy with them, and if the stations are to help the Department, they must be in sympathy with it. There must be cooperation based on sympathy."

In this spirit I want to report briefly some of the recent organizational changes in the Department of Agriculture as they relate to research.

One of the major objectives was to regroup the various segments of activities in the Department concerned with economics research. In establishing the Economic Research Service we have accomplished this. Economics research, formerly conducted in the Agricultural Research Service, the Agricultural Marketing Service, and the Foreign Agricultural Service is now consolidated into one unit. This allows ARS to be concerned more fully and penetratingly with scientific research related to production and utilization. Such physical science research as remains in AMS is related to marketing. FAS was freed from all research responsibility to permit it to center its attention entirely on the international aspects of agriculture from an operational point of view. At the same time, the Administrator of the Agricultural Research Service, the Department's

principal science agency, is responsible for the overall cooperation of all research activities for which the Department is responsible to Congress.

Dr. Selke and Dr. Knoblauch discussed with you this morning, aspects of the research reorganization in USDA that apply specifically to establishing the Cooperative State Experiment Station Service. The basis of this latest action was one of sympathetic understanding of the position taken by your Association in previous years. Its principal purpose was to strengthen research in agriculture and to develop the best mechanism for mutual planning and coordination of scientific research under our dual, nationwide system.

Funds for Research and the Paradox of Plenty

While we are talking about strengthened research, it is important to mention the paradox that again seems to be disturbing some people -- that of expending public funds for research in agriculture in the midst of agricultural abundance. We know that many people are expressing concern that our country in its food abundance should require continued public support of agricultural research.

This is not new. Henry A. Wallace, former Vice President and prior to that Secretary of Agriculture for 8 years, delivered the final of the Graduate School's series of Centennial lectures. He frequently reminisced about problems he had while Secretary, including problems of the budget. The 1930's were years of surpluses too, as many will remember. A highly-placed government leader wanted to cut off all Federal support for agricultural research. The reasoning was that with such surpluses

in agriculture, we no longer needed research. Mr. Wallace told us how he fought off successfully that attempt in the 1930's to cut off research monies, including Federal grants. He ended his ad lib remarks by saying, "We can't turn our backs on science."

As in any industry, it is necessary to carry on research in order that we continue an efficient and productive agriculture. An abundant production above immediate needs does not negate the necessity for programs to develop new knowledge about production and marketing and educational programs to bring about their adaptation. This helps strengthen our total economy and our national security.

We are exploring new frontiers in research. Our marketing research scientists are developing non-destructive methods of determining quality through use of light penetration. They can determine the maturity or water core condition in apples, black spot or hollow heart in potatoes, and internal color in tomatoes without cutting or destroying the product. This research is now moving into the grading line as a means of improving the grading process.

Even though we have made great progress in research, we need more basic knowledge about plants, soil, and water, and their inter-relationships, about animal and plant genetics, the ecology of insects, the biological development of viruses and other disease-causing organisms. We need more knowledge about such fundamentals as the total effect of sunlight upon the production of our food supply, and use of radio-active isotopes as a tool in solving production and market quality problems.

National Resources Development

Another great challenge shared by the Department of Agriculture and the Land-Grant Colleges is the stewardship of our natural resources and the actual management requirements involved in the protection and improvement of natural resources.

President Kennedy himself has keynoted today's need in this area when he said: "Wise investment in a resource program today will return vast dividends tomorrow, and failures to act now may be opportunities lost forever."

The urgency of conservation of our farm, range, and forest lands is not a new idea. Far-seeing leaders in the State and Federal Government, in farm organizations and in agricultural colleges have, for more than a quarter of a century, pointed to the urgency of conserving and improving our natural resources.

Much has been accomplished, too. Our 186-million acre National Forest system is a monument to the vision of Gifford Pinchot, President Theodore Roosevelt, and other conservationists. Without such lands, wisely husbanded by skilled foresters and land managers, our timber, grazing, water, and recreational resources would be greatly impoverished.

The late Hugh Bennett saw the eroded farm lands of his native North Carolina and went forth to crusade the country and world over for soil and water conservation. The fact that today nearly all of the Nation's farm and ranch lands are included within soil conservation districts, through which the Department extends some of the world's most advanced technology in soil and water conservation, is a tribute to Bennett's zeal.

Through research, in the experiment stations and in the Department of Agriculture, we have developed a body of scientific information, unequalled in the world, that underpins soil and water conservation practices we help farmers to plan and apply.

Through education, the citizenry of our country, rural and urban alike, has come to appreciate the urgency of resources stewardship. Without it, we could not have made the progress in resource conservation that has been made in this country.

As we look ahead, we can see nothing but new and more pressing demands upon our soil, water, and forests. And, at the same time, more need for education, research, technical, and other forms of assistance. You need not be reminded again of the population forecasts. Suffice it to say that in the face of those figures, our land and water resources seem all too limited. We cannot increase the supply of land, and we have no immediate promise of any means of substantially increasing our water supply.

We in the Department of Agriculture are determined to do all we can to step up this tremendous job of building and protecting the natural resources we know are needed for today and tomorrow. Secretary Freeman has pledged this repeatedly in recent months.

In the final analysis, resource management is a responsibility of people -- people on the land, people in the States and counties with responsibility for government, for education, and for action. The Land-Grant colleges have a great opportunity and responsibility in this educational field as well as in research. The only way the conservation job can be done properly is by cooperation, understanding, exchange of information, and genuine teamwork between State, Federal, and private land resource people, working in all areas of natural resource conservation.

Rural Areas Development

Another goal in which the Department and the Land-Grant Colleges are working together is on a vigorous and determined broad attack on stubborn,

persistent, chronically depressed rural areas.

Many rural areas in different parts of the country have been caught up in the backwash of technological change that has left thousands stranded in abject poverty.

Despite the efforts and intentions of the past several years, we find today that 36 percent of all farm families have incomes of less than \$2,000 a year. If the underemployment in our farming regions last year were converted into terms of unemployment, there would have been 1.4 million persons in rural areas unemployed.

A broadened revitalized Rural Areas Development Program has been launched. The program is built on local leadership.

Secretary Freeman stated this concept as follows:

"The Department will provide needed technical services to State and local agencies and groups. However, the initiative for formulating and operating successful programs of rural area development must come from the locality, and the drive to keep up the program must be the responsibility of local people."

The Cooperative Extension Service, as the field educational arm of the Department and the Land-Grant Colleges, has a challenging responsibility -- that of educational and organizational leadership.

The problems of rural economic stagnation are so deep-seated and the efforts so widespread on all community facilities, resources, and attitudes that the only program that will work is one that attacks many problems simultaneously and in depth.

The solutions to the problems involve much more than increased opportunities to farm more efficiently. There is also the need to develop jobs in rural areas and to provide training opportunities to those who must find

employment off the farm. Here is where the total resources and long experience of the Land-Grant College needs to be brought to farms on the problems.

Goals and Priorities

Back in June, at a meeting many of you attended, I had an opportunity to talk on our National goals in science and education, and the challenge these presented to USDA and the Land-Grant College system. I pointed out then that these goals are related to our many other goals, including the Nation's paramount goal -- "to guard the rights of the individual, to insure his development, and to enlarge his opportunity."

We know that in the agricultural sector of our economy the American farmer is not receiving the rewards his great success deserves.

This administration has been placing considerable emphasis on interpreting the success story of agriculture to all the people. The goal is to achieve a better public understanding that agriculture is still our most basic and fundamental industry and that efficiency and capacity to produce must be of interest and concern to all.

American agricultural superiority is just as much a deterrent to Mr. Khrushchev as the Strategic Air Command. He is aware of our great agricultural productive capacity in contrast to his lack of resources to feed his people adequately.

With this understanding the public will be appreciative of programs designed to encourage productive efficiency and at the same time to make it possible for farm people to share equitably in the economic abundance of the Nation's total economy.

Telling this story is an opportunity and responsibility jointly shared by all of us. This administration greatly appreciates your past efforts in

helping get public understanding of American agriculture as well as your educational leadership in helping explain the implications of agricultural programs. It is a challenge we cannot afford to ignore.

In conclusion, I should like to quote a paragraph by President John F. Kennedy on the occasion of his acceptance of an honorary degree from the University of North Carolina:

"This is a time of national maturity, and understanding, and willingness to face issues as they are, not as we would like them to be. It is a test of our ability to be farseeing and calm, as well as resolute, to keep an eye on both our dangers and our opportunities, and not to be diverted by momentary gains, or setbacks, or pressures. And it is the long view of the educated citizen to which the graduates of the University can best contribute."

* * * * *



DEC 15 1961

It is a privilege to have a part in the Farm-City Week activities of San Joaquin county.

The rich diversity and productiveness of this great valley are well known in Washington and, indeed, around the world. You set the pace for others. Your achievements are a source of pride to us all. They are a striking example of what can be gained through science and technology in a society attuned to rapid change.

We welcome observances such as this one--occasions when people from the farms can join with the townspeople to take note of aims they hold in common.

Mutuality of Interests

It would be inappropriate for me to elaborate on the interdependence of farm and city before an audience that so fully appreciates the strong bonds between the two. It is significant that you people here in San Joaquin valley were among the first to adopt the term "agri-business". You adopted it, I'm sure, because it so well describes the web of activities stretching from farm to city in this rich valley.

The Role of Agriculture

When President Kennedy proclaimed November 17-23 as National Farm-City Week, he gave us an opportunity to discuss one of the urgent goals of the New Frontier. That goal is to let our people know that the strength of our economy rests on a vigorous agriculture. It is to make them aware that agriculture is an expanding not a declining industry. And it is to show, in a way that cannot be ignored, that our future well-being, in fact our national security, depends on our ability to maintain a healthy agriculture.

Talk by Dr. Frank J. Welch, Assistant Secretary of the U.S. Department of Agriculture, at the Farm-City Week banquet of the Greater Stockton Chamber of Commerce, Stockton, California, November 20, 1961.

The number of people who know about farming from first-hand experience has been declining for many years. Millions of people, once needed in farming, have been freed by scientific agriculture for the countless other jobs that are essential to modern industrial society.

Today, only a few are required to produce an agricultural abundance for many. Nine out of ten people of the United States live in cities and towns.

Less than 10 percent of our people are engaged in farming. But these people are the hub of the largest industry in the United States. They produce some 600 million tons each year of crops and animal products. They buy more than six million tons of finished steel in farm equipment and construction and 40 million tons of chemicals in pesticides and fertilizers. Their purchases of goods and services total 50 million dollars a day and more than 16 billion dollars a year.

Agriculture's Success Story

Less than 7 million farmers in the United States are able to give us the highest agricultural production in the world. The United States ranks first both in the size and diversity of its output. And our Nation ranks among the highest in the efficiency of its agriculture and the quality of its farm products.

The bargain that our people get in food is unmatched anywhere in the world. We enjoy the lowest real food costs and one of the world's richest and most nutritious diets. There has been a massive shift from the cheaper starchy foods to the more luxurious high protein, high vitamin foods --

meat, milk, fruits, and vegetables. We spend only a fifth of our consumer income on food today. And if we ate the cheaper foods that made up the diet 25 years ago, the cost would be only 16 percent of the average family budget.

These are some of the successes of agriculture that need to be told again and again. They are not widely known.

Farmers Penalized for Abundance

Something else the public generally does not know is this: Farmers are not sharing equitably in the bounty they have helped to create. In fact, they are penalized for the abundance they produce. The farmer's share of the Nation's income has steadily dwindled as he has helped to build the Nation's agricultural output. In the past 15 years, the farmer's share in the Nation's income has dropped from 10 percent to 4 percent. This occurred at a time when personal income for the Nation as a whole more than doubled.

I am happy to report that farm income is up this year. The combination that has improved the farm income situation includes a number of things -- record marketings of farm products, higher price supports for major crops, and the new farm programs have all played a part. Production expenses have absorbed about a third of the gain. Even so, it appears that the net income of farm operators in 1961 will be about a billion dollars higher than it was last year.

Surpluses--Fiasco or Success

Unfortunately, the picture of agriculture that has gained currency among many non-farm people is dominated by one thing--farm surpluses.

It is an amazing paradox that our agriculture--envied by much of the world--is seen as a fiasco by some of our own people.

Granted that surplus farm products are a national concern, they represent only six to eight percent of our total agricultural production. They are bothersome in terms of supply management and in relation to price levels. But what we must ever keep in mind is that they serve an important function. They are a cushion against disaster and they are a force of great strength in the strategy of peace.

Agriculture and Foreign Policy

Here in this great inland port you see daily evidence of the world's interest in the products of our farms. You see ships loaded with grains, cotton, and scores of other agricultural commodities sail from Stockton to ports in many lands.

This year the United States is exporting more than \$5 billion worth of farm products--the big share of them destined for countries that will pay for these products in dollars. Less than a third of our shipments abroad go to countries that pay the bill in their own currencies or receive these products as outright gifts.

And yet these shipments can very well be the decisive force in our contest with Communism. More and more, it is becoming clear that we have a spectacular advantage in our reserves of food and our ability to produce food.

World Food Budget

Incidentally, in connection with our export opportunities I wonder if you know about a decisive step taken last spring to give us a clearer picture of the world's need for our farm products.

Shortly after he became Secretary of Agriculture, Mr. Freeman set up a study by Department scientists to appraise the foods produced and used by the people of the world.

The committee has made its report under the title, "The World Food Budget." It is the most comprehensive appraisal of the world's food supply ever taken. It is based on the statistics that are available and where no reliable statistics could be obtained, the report is based on scientific judgment. It shows the food produced throughout the world in 1958 and projects world food output in 1962 and 1966.

Along with estimated production, the World Food Budget gives an appraisal of food consumption. Two of the most difficult questions in drawing up the study concerned human needs as they are related to food for growth and health. What are the minimum needs? And how can we translate the thousands of foods used around the world into a few basic elements to measure these needs?

A committee of nutritionists from the Department, the International Cooperation Administration, and the United Nations Food and Agriculture Organization provided the formula. The elements appraised are animal and vegetable proteins, fats, and total calories.

The World Food Budget gives us a yardstick to measure what President Kennedy has described as "the gap between abundance here at home and near starvation abroad."

The bright spot that stands out--as the picture of the world food budget comes into focus--is this:

For the first time in history a large number of people--a third of the world's population--no longer fear hunger. These are the industrial nations of the world. They are in the temperate zones and most of them are north of the Equator. They include Japan, which has built up its economic potential at an unprecedented rate in the past 10 years, Eastern Europe, and the Soviet Union.

All of these countries have adequate food supplies. Moreover, they have resources to assure a permanent food supply. That is, barring war, they have the science and technology, the agricultural and industrial plant, the management and the money, the energy and the thrust to increase food production as it is needed.

The gains that have been made by man to banish hunger from the earth constitute a heroic achievement. Further progress will, of course, depend on continued advances in agriculture. It will depend on well-supported programs of research and development. It will require investments in agricultural research and development at an accelerated rate if the food supply of these nations is to keep up with the rise in population.

For a third of the world's population the fear of hunger has disappeared. But it continues for almost two billion people in the underdeveloped countries of the world. For them malnutrition is commonplace, hunger not unusual, and famine still a threat.

Stories in the news only last week told of severe crop losses in Egypt and near famine in Kenya. But the food shortages in Africa are only a small part of the world food deficit.

The big gap--85 percent of the deficit--is in the Far East. And the major share of this--60 percent--is in the noncommunist countries of Asia.

President Kennedy has taken positive steps to share our agricultural abundance in the Food for Peace program and other measures of foreign aid.

The generous spirit that has characterized our people throughout our history is a strong influence on the New Frontier. But generosity alone will not solve complicated human problems. And even if we wished to ship all the wheat we have in storage to countries that are short of food, there are many barriers to prevent it--barriers in the form of distribution systems in the countries themselves and barriers in the form of international agreements that stabilize world markets.

Moreover, our surpluses would be only a partial answer. The large stocks of wheat built up over the years would fill the world deficit for a little more than one year. And they would not meet the nutritional needs for proteins and fats.

The approach to the world food deficit must be made on a much broader base.

Narrowing the gap between abundance and near-starvation will require vigorous efforts along many lines. Contributions must come from every country that has food to share. And toward this end, Secretary Freeman has urged the nations of the world to join forces in the United Nations Food and Agricultural Organization and set up a world food bank.

Narrowing the gap depends on continuing technical assistance to the less developed nations. Our own country has pioneered in this work. Some 1400 agricultural technicians from the United States are now helping to train technicians in 59 cooperating countries.

The University of California and the land-grant colleges in every other State in the Union have joined the U.S. Department of Agriculture in providing technicians for overseas work....and in training foreign participants. Nearly 13,000 technicians from all over the world have been trained and some 1200 are currently taking part in these programs.

Progress Means Change

Narrowing the gap between abundance and near-starvation implies changes in our own agricultural production. And one of our concerns in the Department of Agriculture and in land-grant colleges and state experiment stations is to find ways of gearing our agricultural production to changing needs.

Our people are not afraid of change....even at the furious rate that has come with advancing knowledge. Change is the key to progress. And the idea of progress is the force that has brought our Nation to world leadership.

Progress is defined by the dictionary as advancing to an objective, gradual betterment, or progressive development of mankind. The people of this country of ours have made tremendous gains since 1776 because, being free from the artificial, social, economic, and political restraints of the Old World, we developed a dynamic will to succeed. And we developed the democratic, economic, and political institutions compatible with success. This urge that pushed us on to our present high plateau in economic and social attainment was internal--there were no pressing external compulsions.

Today this country and our way of life are threatened as never before. Our country is locked in a great military, economic, and ideological struggle. We no longer work solely for subsistence and the sheer satisfaction of accomplishment; we work for our very existence. Under such circumstances we must make maximum progress as a Nation. This means that we must work

together as a team--all segments of our economy--to the end that we may be efficiently and abundantly productive and thereby economically and politically strong, for only the productive are strong and only the strong are free.

Long ago mankind learned that blessings pour down when neighbor joins neighbor in common cause. This celebration of Farm-City Week is a happy reminder of that ancient lesson. Thank you for giving me a part in it.

* * * * *

JAN 25 1962

C&F ASF

LAND ADJUSTMENT NEEDS

You have heard Secretary Freeman outline the general guidelines for this Land and People Conference today. You have also heard Willard Cochrane discuss our changing needs for natural resources and the things that determine those needs.

During the day you will hear other talks and a panel discussion. A group of leaders such as yourselves gathered here today do not want the talking to be all one-sided so I shall be brief. We in the Department of Agriculture are most anxious to hear what the panel of distinguished citizens have to say and to get your comments and suggestions, both at lunch and otherwise.

First, I want to underscore the fact that the basic resource problem in the United States in the years ahead is competition for land and the proper distribution of land among the various resource uses. No longer is there an overabundance of land for each use. The resource needs mentioned by Dr. Cochrane should make this clear to all. Furthermore, in this great country of ours we have no new unexploited frontiers of additional land to be developed as did our forebears.

My second thought is that the United States Department of Agriculture has a very great responsibility in sound land use and in natural resource development -- indeed a responsibility exceeded by that of no other Department. It has far-flung programs on private lands, on public lands, and in the different fields of research. The Department of Agriculture has Federal leadership and responsibility for soil, water, forest, and related resource development on all private lands throughout the 50 States. This amounts to three-quarters of the Nation's land area.

Address by Assistant Secretary Frank J. Welch before the Conference on Land and People, Washington, D. C., January 15, 1962, Jefferson Auditorium, U. S. Department of Agriculture.

In addition, the Department has full managerial responsibility for 186 million acres of forest and grasslands now nationally owned. These are the National Forests and Grasslands.

Stated another way, the Department of Agriculture's Federal responsibilities for the development and conservation of the Nation's renewable natural resources extend to all croplands, about 80 percent of the forested land, and over three-quarters of the range and pasture land.

Except for fish and wildlife, the Department of Agriculture conducts virtually all Federal research in renewable natural resources.

I, by no means, overlook the tremendously vital role of the States, of private citizens, and the increasing activities and interests of counties and municipal governments in natural resource conservation. But I do wish to make clear why the Department of Agriculture is so concerned with the proper use of land and the best apportionment of land among the various resource uses.

Now with respect to crops, the projected estimates of cropland needs for 1980 call for 407 million acres. This would be 51 million acres less than the cropland area in 1959. To a considerable extent this is explainable in terms of anticipated advances in agricultural technology. Thus it appears that we have a highly favorable cropland balance sheet. With the acreage which can be retired, plus that unused for crops but potentially capable of producing them, it should be possible to gradually shift crop production almost entirely to those soils best suited for it both from a production and conservation viewpoint; and this can and should be done.

Our total potential for croplands is about 200 million acres more than the area currently being devoted to crops. Some of this additional potential is better quality than some that is now growing crops. Thus we apparently have

(more)

not only more croplands than will be needed in the future but also an imbalance in the types of land that ought to be growing crops. Both types of adjustments are needed.

Grazing by domestic livestock is the largest single use of agricultural land. In 1959, 633 million acres of pasture and open range, plus 245 million acres of forest range were used for this purpose. In addition, livestock were pastured on 66 million acres of cropland. Thus, 944 million acres, or 42 percent of the total land area of the United States, were devoted to grazing use.

The outlook for pasture and rangeland is in sharp contrast to that for cultivated crops. The per-acre increase in carrying capacity will not be sufficient to accommodate increased livestock needs. Therefore more land will need to be in pasture and range than is now the case. To take up this slack an additional 19 million acres of grazing land must become available. Most of this will come from land that is now in cultivated crops.

The largest single category of land in the United States is forest land. It is estimated that 773 million acres, or 34 percent of the total area of the 50 States, is forest. The long-range projections are that the total acreage of land in forest will not change significantly but the area in commercial forest land should increase slightly from 530 to 537 million acres.

Therefore, needed increases in timber supplies must come almost entirely from higher yields on existing forests.

It is important to bear in mind that these forested lands yield not only timber but also water, wildlife, forage, and recreation. Most forest lands, except those reserved for special purposes such as parks, produce multiple resource values.

(more)

The projections of the Department of Agriculture's Timber Resource Review study of a few years ago indicate that sawtimber growth should about double by the turn of the century and that a major improvement in forest practices, particularly among the small private holdings, is necessary to accomplish this. The small private woodlands comprise 74 percent of the private commercial forest land of the country and are held by 4.5 million owners. Some 3.4 million farmers own and operate 165 million acres of timber land. The extensive farm ownership of woodlands is one major reason why the question of timber supply is primarily an agricultural problem and a responsibility of Federal and State Departments of Agriculture, Land Grant Colleges, the State Agricultural Experiment Stations and other agricultural interests.

It is expected that about 32 million acres of presently forested land will go out of forest in the next 20 years but this reduction will be offset by additions to forest land from land not now in forest. Most of these additions will come from land that is presently in cultivated crops.

The increase in demand for outdoor recreation in the last 15 years has been one of the remarkable phenomena of our time. This has been referred to by Dr. Cochrane.

The forthcoming report of the Outdoor Recreation Resources Review Commission is one of the most eagerly anticipated reports in the field of natural resources for a long time. Except for relatively small areas, there is no special category of land designated exclusively for recreation. This is because recreation is pursued most commonly and effectively on lands also devoted to other uses.

It is expected that there will be a substantial increase in the next 20 years of areas devoted primarily to recreation and wildlife use. And on other lands recreation will command an increasingly greater share of the attention of land managers than it has in the past.

(more)

USDA 158-62

In summary, the probably adjustments needed between major land uses in the next 20 years indicate about a 50-million-acre decrease in croplands, a 20-million-acre increase in pasture and rangeland, no appreciable change in forest lands, and a substantial increase in a miscellaneous category which includes special-purpose uses, urban areas, designated recreation areas, roads, reservoirs, powerlines, etc. This is summarized below:

<u>Land Use</u>	<u>Land Use Area</u> (Millions of Acres)	
	<u>Present (1959)</u>	<u>Projected (1980)</u>
Cropland	458	407
Pastureland	633	652
Forest land	773	775
Miscellaneous	<u>407</u>	<u>437</u>
Total Land Area	2,271	2,271

In this connection, I also call your attention especially to the first and second tables in the Land and Water Policy Report furnished you today.

How will these adjustments in land use be accomplished and how will the increased yields be achieved? These will require a combination of public and private effort, action by legislatures, Federal and State programs and, perhaps above all, public understanding of what is needed and what is at stake.

Some possibilities to encourage conversion of croplands to other uses, to develop recreational opportunities on lands, and to improve conservation and management of lands and waters are suggested in the report placed before you. In addition, the President has recently submitted to the Congress a recommended program for the intensified development and management of the National Forests and National Grasslands. Forward-looking research programs for the Department, including natural resource research, have been prepared and are now under review.

(more)

USDA 158-62

The suggested policies in the Land and Water Policy Report are under consideration by the Department of Agriculture at the present time. We seek your study of them and we solicit your comment and suggestion about them.

In closing I would like to leave this thought with you. Basic to a permanently successful and healthy agriculture and natural resources is a land-use structure designed to meet projected needs. A sound economy is not built on a pattern of use that is the product of previous mistakes, expediency and lack of foresight. The dual problems of cropland retirement and land-use suitability will not solve themselves. They cannot be worked out from year to year on a catch-as-catch-can basis nor are they alone the complete solution. Satisfactory progress can come only from painstaking planning, systematic and orderly programs, and informed decisions.

We are convinced that The Time Is Now for a well-informed and comprehensive effort to bring the productive potential of our entire land resource into adjustment with anticipated needs. This we can do if we bring to this challenging responsibility and opportunity vision and perspective, appropriate planning on all levels of Government, and can have understanding and cooperation on the part of the people.

- - - -

It is very gratifying to share this occasion with other friends of Southern agriculture, particularly since I have had the privilege of working with many of you over the years.

The year 1962 is a special year because it marks the centennial of three events that opened the way for some of America's most significant contributions to agriculture -- indeed, to all mankind.

It was in 1862 that we established a Federal department with the job of acquiring and diffusing among the people useful information about agriculture. That same year, we provided for State land-grant colleges to study and teach . . . to conduct experiments and research . . . to advance agriculture. And in 1862, we laid the foundation of our family-farm type of agriculture, the most efficient, productive, and socially desirable system of land ownership that man has devised.

In the century since that time, great changes have taken place in rural America. But the most dramatic of these changes have come within the working lifetime of many of us here today. Look at what has happened to agriculture in the South during the three decades from 1930 to 1960:

Farming Makes Progress in the South

While this region's total population was increasing by 44 percent, the farm population was decreasing by 60 percent.

Over these same 30 years, the number of Southern farms has dropped by half, and the average size has more than doubled.

Address by Assistant Secretary of Agriculture Frank J. Welch, before the 59th Annual Convention of the Association of Southern Agricultural Workers, Jacksonville, Florida, February 6, 1962.

Jacksonville, Florida, February 6, 1962.

Crops, in terms of cash receipts, decreased from 70 percent of the total to less than 60 percent. Cotton and corn gave way to small grains, hay, and pasture.

There has been a shift to livestock, as well as considerable expansion in forest acreage as farms have been abandoned.

Farmers are operating 10 times as many tractors, putting more than twice as much fertilizer per acre, and using a wide variety of improved practices.

As a result, Southern farmers are becoming more productive and more efficient. Farms are becoming more specialized and more commercialized.

These changes have been reflected in better incomes and better living. Cash receipts per capita are more than seven times what they were in the 1930's, and more farm families now have electricity, running water, and telephones.

This represents progress . . . tremendous progress. All of us here today can feel great pride in the part we have played in helping Southern agriculture advance.

Further Adjustments Needed in Southern Agriculture

And yet, we must face the fact that there's still a long way to go. If Southern agriculture is to come into its own, we must see far greater changes in the next two or three decades than we saw in the two or three just past.

Most of the gains I mentioned have been made on farms that were above average in size and fertility, and these make up a minor proportion of the total.

This is still a region of small farms. More than three-fourths of them have less than 25 acres of cropland, and less than 5 percent have over a hundred acres.

Here is our big farm problem in the South. These small units, with their economic and managerial limitations, are in no position to put to work the science and technology that you and I have had a hand in developing. So we find poor use of resources, low production rates, and lagging incomes.

The significance of this condition is reflected in one shocking statistic: In this country, there are 800 counties with a serious economic problem -- and 600 or more of these counties are here in the 13 Southern States.

It's apparent that this situation calls for drastic adjustments if the agriculture of the South is to meet the competition of the future.

But these problems are not the problems of the South alone -- they are part of the total agricultural problem in our country.

By the same token, your achievements have contributed to America's remarkable achievements in agriculture.

Consumers Get Benefits of Agricultural Abundance

Never before -- at least not since the Garden of Eden -- have a people enjoyed such abundance as we are blessed with today.

In productivity, no other segment of our economy comes close to matching agriculture's rapid strides. Output per man-hour increased more than twice as fast in agriculture as in other industries during the 1950's.

The trouble is that this phenomenal productivity has led to what Secretary Freeman recently called a "crisis of abundance." Farmers are producing more than we need -- in fact, the increase in farm output has been outrunning our population growth over the last decade.

Naturally, the oversupply has driven prices down. The result is that most of the benefits of our advancing productivity have been passed along to consumers, and only the crumbs have fallen to those who really

did the job -- the farmers of this Nation. You know that the per-capita income of farmers is only about half the national average.

So here we have the problem of American agriculture: production too high . . . income too low. And there's no reason to believe that the situation will get any better. In fact, the productivity of American farmers is going to go right on increasing, because what you and I have seen is just the beginning of the agricultural revolution. It has been estimated that continuing advances in science and technology will enable us to grow all the food and fiber we need in 1980 on 50 million fewer acres of land than we now have in production. Meanwhile, we will accumulate ever-mounting supplies unless we take effective action.

Comprehensive Program for Agriculture Proposed

Let me assure you that this situation is a matter of great concern to this Administration. We believe there's no time to lose in seeing that our Nation's agricultural policies catch up with conditions in the 60's. The need cannot be met merely by shoring up prices and incomes from year to year.

We must seek some means to manage our abundance in the interest of both farmers and consumers, and within the framework of democracy and freedom.

This calls for a complete and comprehensive program for food and agriculture. This program must provide, first, for expanding domestic and international uses for our abundance . . . second, for adjusting our production to establish a reasonable balance between supplies and needs . . . third, for intensifying our efforts in conservation and efficient use of land resources . . . and fourth, for creating new opportunities for people through development of rural areas.

The Administration has presented such a program to the Congress. The first steps were laid out by President Kennedy in his farm message last week.

This program for food and agriculture could be likened to a table standing firmly on four legs -- each leg equally important, and each dependent on the others.

Abundance Used at Home and Abroad

One leg of the table stands for Abundance -- making the most of our abundant capacity to produce food and fiber to meet human needs.

We are pressing the search for every realistic and practical means of making full use of these products, not only in our own affluent society but also in a world that cannot satisfy its needs. Vastly expanded programs are already underway.

Here in the United States, only a relatively few people are unable to obtain enough food. Yet, there are many who lack a balanced, nutritious diet.

More than 6 million of these needy Americans are now receiving donated foods to improve their diets. To the flour, cornmeal, dry milk, and lard we have added protein items such as peanut butter and canned meat.

About 143,000 needy persons are enjoying more varied and healthful meals under the experimental food stamp plan we launched in eight areas.

An all-time record of more than 14 million school children are eating nutritionally balanced school lunches.

Under the expanded special milk program, more than a billion pints of milk will be consumed this year by youngsters in schools and institutions. This is in addition to more than a billion pints drunk with school lunches.

Another part of our effort here at home will be to step up research to develop new industrial and food uses for farm commodities. It's utilization research of this sort that has given consumers such well-established food items as concentrated fruit juices, frozen foods, and potato flakes.

In many other nations around the world, we are using our abundance to relieve hunger and promote economic development. America's food is proving to be the greatest instrument for peace and freedom that we have yet developed.

Our agricultural exports rose to a record-breaking high of some \$5 billion in calendar year 1961. This happened because USDA services to exporters were strengthened, and more of our abundance was shared through Food for Peace.

Balance Is Aim of Production Adjustment

From use of abundance, let's move around to the next leg of the table. This one stands for Balance -- managing our abundance by adjusting supply according to the need.

This hits our production problem at its source, which is the most economical and realistic way to go about it. The Administration believes this long-range effort can help us achieve a balance that will lower budget expenditures as well as raise farm income.

We are proposing supply-management programs for four major commodities -- wheat, feed grains, dairy products, and cotton. We hope to have the Government-held excess stocks sold by 1967.

I want to emphasize that we modeled these proposals on programs that have successfully adjusted production to demand in cotton, tobacco, and rice. We are talking about real prospects -- not unrealistic hopes.

In developing each proposal, we advised with a wide cross-section of producers and processors. I doubt that any program presented to the

Congress has been conceived with broader consultation than this one.

Conservation and Land Use to Be Promoted

Now let's turn our attention to the third leg of the table representing our food-and-agriculture program. This leg stands for Conservation -- managing and using our land to meet the needs of today and tomorrow.

We are fortunate in this country to have an ample supply of land. But we must remember that there's no longer a great overabundance, and we have no new land to be exploited. Our economic growth and our national strength depend in large measure on the way we conserve, develop, and manage the resources we have.

Our primary concern, of course, is to make sure we have plenty of food and fiber. Since technical progress now enables us to do this with ease, we must look beyond subsistence needs to assure that the land is being used in ways that best meet the needs of all our people. We all want to see our resources used and improved -- not simply set aside and forgotten.

At present we have some highly productive land being used to grow crops that we can't use effectively. About 87 percent of the total output today is produced by only 40 percent of our farms. If we are going to make adjustments in production, we need to find ways to make better use of some of this land.

In the first place, the Administration plans to encourage the shifting of some cropland to grass -- the use for which many of these acres are best suited. Our taste for meat products will probably continue to increase, and we can expect to see more land gradually taken over by the livestock industry.

Next, the planting of trees on cropland is to be promoted. Although this will not contribute materially to our timber supply over the next 20 years, it will help bridge the gap between growth and drain that is

expected by 1980. Furthermore, new forest lands will be useful for recreation, for wildlife, and for general use by a growing population.

Related to this need for more trees and grass is the need for well-balanced upstream watershed development. This will help protect the land, provide water supplies for urban needs, and yield recreational benefits for everyone.

You notice that I've twice mentioned recreation. With higher levels of living and increased leisure, our people have a rapidly growing appetite for recreational resources. There's a great need for outdoor recreation, for lakes and ponds and streams for fishing, for wildlife habitat, for open spaces and wilderness areas. We are proposing technical assistance, cost-sharing, and loans to encourage land-use adjustments to meet this need.

Along with the needs already mentioned, we must maintain some good land in a ready reserve so it can be called back into production in event of emergency. In addition, we can look for a continued increase in requirements for highways, military reservations, institutions, and other public facilities.

Rural Economic Development Is Stimulated

There's one more leg on this food-and-agriculture table we've been talking about. This one stands for Development -- providing better opportunities for the people who live on the land.

About 60 percent of the Nation's farms produce only about 13 percent of our agricultural output. Some 2 million farm families live on farms that are too small to earn a decent living.

Much of what I said about diverting good cropland to grass, trees, and recreation uses will apply equally as well to this acreage. But the

people living on these farms do not contribute significantly to our excess production, and the main concern here is to find new economic opportunity.

This Administration does not subscribe to the idea that these people must be driven off the land to our already overcrowded cities. On the contrary, our aim is to help provide attractive opportunities that will enable the next generation to stay in dignity in rural America, if that is what they want to do. We seek to preserve the many values of rural life, and we believe there is a place here for both full-time and part-time family farms.

Of course, many of these people will move to our cities and find better lives there, and this is good. But it isn't necessarily the answer for everyone. Too often, the man who leaves his farm to go to the city finds he has to compete in a labor market that demands skills he does not have.

As Secretary Freeman has said, the only sensible answer is not to attempt to move the people of rural America to the cities but to devise policies that bring new resources to rural America. We are moving in this direction.

We are proposing legislation to provide for complete rural renewal operations to reinvigorate the most seriously stricken areas. Rural renewal may well become the new frontier in rural America.

We are making a special effort to encourage the combining of small tracts of land into farms large enough to provide adequate incomes for farm families.

We are promoting the establishment of public installations, factories, commercial enterprises, and recreational facilities to provide new job opportunities in rural communities. Over in Mississippi, for example, the

Forest Service had a hand in starting a new charcoal briquetting plant that has provided several kilns a nationwide outlet through a chain of supermarkets.

We are encouraging the construction of watershed protection projects and community facilities, which can do much to stimulate an area.

We are organizing training programs so that rural people can compete in accord with their capabilities in new lines of work.

We are carrying out this program in cooperation with States, counties, and local communities. Local leaders decide what is to be done. We assist them by making available all the research, education, and program resources of the U. S. Department of Agriculture through the Rural Areas Development Program.

Although this program has been in full swing for only a few months, we've already made a lot of progress. More than 350 counties have made plans about what they are going to do.

Just one more point -- and a very important one -- on this Rural Areas Development Program: It cannot be really successful without the help of all of you people here today.

Extension, Research Have Important Tasks

We look to Extension to provide leadership for this effort. It's up to you to seek broader public understanding of the need for resource adjustments in agriculture. It's up to you to help rural people understand the alternatives they face and make choices about efficient use of their resources in improving family income and living conditions. Extension must accept broader responsibilities than ever before. I believe you face your greatest challenge.

We also look to research to play a vital role in rural development, for the understanding that comes from research is the key to this effort.

Research across the board will be required to yield new knowledge in a variety of areas. We need to put new emphasis not only on research for improving farm production practices but also on studies looking to the most advantageous use of resources. Only in this way can we protect the gains we have already made and, at the same time, maintain our momentum in pushing efficiency to new levels.

This, then, is our four-point program for America's agriculture:
Full use of our Abundance. . . . Balance of production with need . . . Conservation
and use of land . . . and Development of rural areas. I believe this program will help agriculture survive these times and go on to new achievements in the years ahead.

Need for Further Education Stressed

And now in closing, I want to say a word about a matter that I believe is vital to agriculture and to our whole society. We must have more education -- I'm talking about academic education -- for ourselves, our children, and those who follow. We in the South have neglected this need for far too long.

Education, in helping each individual develop his capacities to the utmost, contributes to the development of this Nation's most valuable resource. Indeed, education has been called the one big common denominator in America's hopes, problems, challenges, and opportunities.

Educating our youngsters for the future -- in science, technology, and the liberal traditions -- is perhaps our most pressing opportunity and responsibility today. If we meet this challenge -- and meet it we must -- we will automatically take care of many of the difficult adjustments that face the South and this great Nation of ours.

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
JAN 7 - 1966
C & R-ASE

W44
Apr 5, 1962
copy 2

THE MIGRATION OF IDEAS

Great Britain symbolizes two words that are much in the minds of the statesmen of the world. Those words are "orderly transition." They describe your pioneering efforts to bring people around the globe into the twentieth century.

The words give both comfort and hope to our view of the world scene. For wherever one travels today he finds radical change is in the air. People everywhere are breaking down ancient barriers.

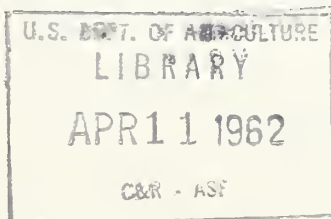
A spectacular example, within the past year-and-a-half, has been the flight of five men into space. Another is the European Common Market.

On the one hand, man has overcome the physical barriers that held him earth-bound through the ages. On the other, he has razed political and economic barriers that made it difficult to take advantage of new technology.

Science has shrunk our world. It has become frighteningly small when we consider today's weapons. But it has become manageably small when we consider the opportunities to build institutions that will make it possible for people everywhere to enjoy peace and plenty.

Communication of our ideas for building a peaceful world is the powerful deterrent of war and destruction. Along with nuclear weapons, science has given us the means to communicate with breathtaking speed. Jet planes, radio, and television have become commonplace around the world. Now blue-prints are being drawn for world communications satellites.

Remarks by Dr. Frank J. Welch, Assistant Secretary, U. S. Department of Agriculture, to British agricultural research leaders, U. S. Trade Center Auditorium, London, England, April 5, 1962.



Our task is to learn how peoples of the world can share the knowledge coming out of research and experience. Our concern is that they use the knowledge to produce and distribute the abundance now offered to a world at peace. That is our only choice if mankind is to survive.

Because food is basic to life, diffusion of knowledge about agricultural techniques is the first order of business. And those of us in agricultural research and education carry a heavy responsibility for man's future.

Can we move forward as purposefully and rapidly as the times demand?
We have made a good start.

Science has revolutionized agriculture in my country and yours. It has made our farms marvelously efficient and productive. It has released millions of workers--formerly needed on farms--to the industries and services that are essential to modern society. And it has provided much of the thrust required in the form of capital to achieve high mass consumption economies.

A Century of Experience

The history of agriculture in the United States is filled with examples of how a people can draw on ideas from many sources to meet their own needs. Our experience has shown too that the mixture of many cultures--the melting pot, if you will -- brews an inventive society.

Our crops were brought in from all over the world and so were the methods of cultivation. We reshaped them to fit our environments and needs through systematic research. And this is the case with livestock and with the basic tools of agriculture.

We have been reviewing the history of our agriculture, recently, as we prepare to celebrate the hundredth anniversary of two major institutions -- the United States Department of Agriculture and our Land-Grant college system.

Congress created the Department of Agriculture and passed the Morrill Act, which provided public lands to establish colleges in each state, in 1862. These actions were taken after a long period of agitation, an agitation that reflected the migration of ideas from Britain and Western Europe about improvements in farming and in education.

The organic act establishing the Department of Agriculture described its primary function as research and education. That is, it became the Department's responsibility to acquire and diffuse among the people of the United States useful information on subjects concerned with agriculture in the most general and comprehensive sense of the word.

One of our distinguished philosophers of political theory has pointed out that the Department of Agriculture was the first client-oriented department in our government. It was firmly based on science. It had a strong sense of mission. And it represented a new set of relations between Federal and State governments.

The new colleges that were set up in the states under the land-grant plan soon came to be called "the people's colleges." They were open to all. They were not restricted to any one educational program but were free to experiment . . . to modify their programs to fit the changing times. One of the great responsibilities of these colleges has been to further the growth of scientific and technical knowledge.

Today, these colleges have become great universities in each of the 50 States. They enroll more than 20 percent of the college students in our country. They grant four out of 10 of the doctorates given each year in all subjects. About half of the doctoral degrees are in science, engineering, and health professions. About a fourth are in the arts, languages, business, and educational training. And of course the Land-Grant colleges supply the big share of scientists and technicians on the staff of the U. S. Department of Agriculture and in the State Agricultural Experiment Stations.

Our experiment stations came somewhat later. And we owe a special debt to England for ideas on this subject. Experiments at Rothamsted had been going on more than 40 years when Congress passed the Hatch Act in 1887. This law provided for Federal grants to each of the States to finance experiment stations devoted to agriculture.

Many of the changes that helped to shape our agricultural institutions can be traced to the leadership of a canny Scot--James Wilson. He was born on a farm in Ayrshire and migrated with his parents to the United States in 1851 when he was 16.

James Wilson became a successful farmer in Iowa, a newspaper editor, a member of Congress, a professor of agriculture and director of the Iowa State Agricultural Experiment Station, and finally Secretary of Agriculture. He held the office for 16 years -- from 1897 to 1913.

(more)

USDA 1107-62

It was during Secretary Wilson's tenure that Congress strengthened and extended research in food and agriculture and passed the meat inspection and pure food laws. Our Forest Service was set up during this period.. And shortly afterwards, in 1914, Congress established the Agricultural Extension Service to bridge the gap between science in the laboratory and practice on the farm.

The depression of the '30's made our people responsive to the imaginative leadership of President Franklin D. Roosevelt. This, in turn, brought novel and far-reaching ideas to the Department of Agriculture--innovations that gave our Nation a genuine soil-conservation program, land-use planning for future needs, a Rural Electrification Administration that eventually brought electric power to all of our farms, and new credit and supervisory programs to help farm families gain a stronger foothold in the economy.

Twenty-one years ago when the courageous forces of Britain held the line against Hitler's onslaught, our farms were able to give you needed support. You said to us, "Give us the proteins and meat and we will increase our own production 15 or 20 percent, just like that."

We were able to supply the proteins and meat and then the arms that contributed materially to the subjugation of the enemy. And after the war, our farms helped to save the world from famine.

Close International Ties

Our agricultural capacity was put to its most exacting test by World War II and its aftermath. One reason that it was able to meet this test is that our agriculture has, from the beginning, been closely linked with the international economy.

Our farmers have been just as enterprising as our industrialists in seeking world markets and in finding ways to serve them.

Trade opened channels for the migration of ideas in colonial days. It has been a potent force in the exchange of ideas through the years.

Two other forces now exerting a powerful influence are the growth of knowledge and the rising expectations of people around the globe. Still another is the firm conviction in my country and yours that our people can progress only as others progress with us.

U. S. Agricultural Program for the Sixties

We have set four goals for agriculture in the sixties. These are abundance -- to expand food consumption, both domestic and foreign balance -- to adjust the production of commodities with market outlets; conservation -- to achieve better land use and development -- to upgrade economic opportunity for our rural people.

We are intensifying our efforts to use our abundant agricultural productivity to meet basic human needs in the larger community that encompasses the world.

We believe there is no such thing as a purely domestic question in a world in which nuclear weapons are stockpiled and men can orbit the earth in a matter of hours.

Our urgent concern is to create more pathways for the transport of knowledge to peoples who must be moved into the second half of the twentieth century if we are to have a peaceful world community.

Your country and mine pioneered in technical assistance to developing countries -- unilaterally and in cooperation with FAO. Over the past 10 years, we've learned many useful techniques for helping other people learn how to improve their agriculture.

We know the first step is in the exchange of people. Our technicians can be helpful and our educational and service institutions can provide basic educational opportunities.

Currently 1400 agricultural technicians from the United States are at work in Asia, Africa, and Latin America. Most of the technicians represent one or another of our Land-Grant colleges. For instance, crop specialists and agricultural engineers in Indonesia are on the staff of the University of Kentucky. I know first-hand about their work because I, too, am on leave from the Kentucky College of Agriculture.

Members of our Indonesia team were much encouraged some months ago when Indonesia decided to acquire and make available to the university some 600 acres of land for experimental purposes.

We know from our own experience that the farm, together with the research facilities that will be developed on it, will do two things. It will provide valuable research information, and it will enrich and contribute much to the training program--both at the under-graduate and the graduate level. It will serve also as an effective demonstration center for the education of adults.

No country can match Britain's long record of educating men and women from around the globe. We take pride in following your example. Some 1200 men and women from the developing nations are studying food and agricultural work in the United States under the auspices of our government. Nearly 13,000 technicians from other parts of the world have now participated in the U. S. educational program.

(more)

USDA 1107-62

The efforts I have just outlined -- like the Colombo plan and much of the activity of FAO -- are designed to help people in traditional societies make the transition to contemporary life. These efforts are designed to prepare these people for a world in which everyone who so desires may benefit from science and its application.

On a global scale these activities compare with the work of what we call the teaching and action agencies in the U. S. Department of Agriculture -- the agencies responsible for extension, soil conservation, marketing, adjustment, credit, and regulatory services.

These are the agencies that diffuse knowledge. They work in close cooperation with the Department's Agricultural Research Service, the Land-Grant Colleges and the State Experiment Stations in helping people across our Nation put new technology in agriculture to work.

Our research in food and agriculture covers six broad fields of inquiry -- farm production, the utilization of farm products, home economics, forestry, marketing, and economics. Here, too, the work is done cooperatively by the Department of Agriculture and the State Experiment Stations. The dual structure of publicly supported agricultural research reflects both Federal and State responsibility. It recognizes the diverse topography, climates and soils of our Nation. The State Experiment Stations investigate problems of interest to the people in that State. They cooperate with other States and the Department of Agriculture on problems of regional or national scope.

I detail these activities to indicate the large number of scientists and technicians in food and agriculture in the United States. Along with some 25,000 men and women engaged in meeting the Department's responsibility "to acquire and diffuse knowledge," there are several thousand on the staffs of the Land-Grant Universities and the State Agricultural Experiment Stations, and a large number of others in the various industries that serve or are served by our farms.

We are particularly indebted to the British scientific community for help with a problem that becomes acute as knowledge grows the task of keeping abreast of new findings. The science abstracts compiled from world literature and published monthly by the Commonwealth Agricultural Bureaus help us draw on the great pool of scientific talent around the world. Our people asked me to take this occasion to express their gratitude for this service to world agricultural science.

One of our newer programs -- the Agricultural Trade Development and Assistance Act (PL-480) -- permits us to invest returns from agricultural abundance in research to improve food and agriculture.

The Act authorizes the Department of Agriculture to contract with other countries for research and pay for it with local currencies from the sale of farm products.

We seek institutions that can make specific studies more rapidly or more effectively than would be possible in the United States. Our emphasis is on basic research, and we are particularly interested in projects that may lead to the development of new uses and new markets for farm products.

There has been no dearth of ideas. More than 1100 projects have been proposed by scientists in many different countries. It would cost more than 75 million dollars to implement these proposals . . . about five times as much as we currently have allocated for this work. We have made 255 grants to research centers in 24 countries.

(more)

USDA 1107-62

We believe this program can be enormously fruitful. It can pay returns beyond the acquisition of specific knowledge, which is the immediate goal. It permits coordination and the team approach in research on problems of common interest and thus makes more effective use of brainpower and equipment. It helps strengthen the scientific community in countries where there is only limited support for science. And it adds new channels for the migration of ideas throughout the world of science.

This program has confirmed what we have long known. The discoveries of science come out of the melting pot of human thinking. They are the heritage of all men.

Can we manage the orderly transition that will permit future generations to enjoy this inheritance? That is the question before us.

- - - - -

* * * *

USDA 1107-62

7280.39
W44
Apr. 5, 1962
Cap 2

ROLE OF AGRICULTURAL RESEARCH IN THE DEVELOPMENT
OF THE U. S. GRAIN AND LIVESTOCK INDUSTRY

It's a great pleasure to have this opportunity to talk with members of the Compound Animal Feeding Stuffs Association who are here to attend our Feed Show.

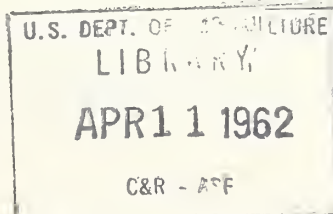
As a representative of my country's agriculture, I feel somewhat in the position of a feed salesman talking to his best customer! The United Kingdom is, of course, our oldest and largest market for agricultural products. Your purchases include a fifth of the feed grains we export, as well as substantial quantities of wheat and soybeans.

Much of this goes to the 1,200 manufacturers of compounds, represented by you gentlemen here this morning. Let me express to you personally our American admiration for an industry that has more than doubled its volume since 1950. That's an impressive record, and I congratulate you. Your industry will no doubt continue to grow as long as it's good business to employ British labor, facilities, and husbandry to convert imported feeding stuffs into meat, milk, and eggs.

This Trade Center symbolizes the commerce that has flourished between our countries for more than three centuries. But stronger even than this bond of trade are the bonds of language and law and science between our two peoples. In no other country, outside my native land, do I feel so much at home.

Talk by Dr. Frank J. Welch, Assistant Secretary, U.S. Department of Agriculture, before members of the Compound Animal Feeding Stuffs Association, U.S. Trade Center, London, England, April 5, 1962

4635



USDA 1104-62

Science Transforms American Agriculture

Many of you have visited the United States. I hope that you saw not only our cities and our scenery but also our fields and ranges. . . our feedlots and milking parlors . . . our herds and flocks. These are the products of a revolution that has transformed American agriculture in the space of a lifetime. We are blessed with such abundance that we can feed and clothe our own people and have enough left over to share with millions of others around the world.

The force behind this revolution is science and technology. This force has brought new efficiency to nearly every phase of our agricultural operations. Our family farms are getting larger and more specialized. We are producing well over a half more today than we were in 1939 . . . on about the same amount of land . . . with a third fewer farmers.

Such intensive application of science to farming is a relatively recent development. For the first 300 years -- right up through World War I -- we met increased needs simply by putting new lands under the plow. Acre for acre, yields remained about the same.

Fortunately, there were some farsighted individuals who knew that good farmland would one day all be farmed, and that something had to be done to increase farming efficiency. Their efforts brought about the establishment . . . just a century ago this year . . . of our Land-Grant colleges and the United States Department of Agriculture. Research and education were encouraged, and new farm practices began to emerge.

Even so, the improvements barely managed to offset a decline in soil productivity, and yield levels still changed very little. Public concern over this condition resulted in the birth of our conservation movement early in this century.

Then, in the period between the two World Wars, two other significant developments occurred. First, the application of mechanical power in farming gradually released millions of acres from the production of feed for horses and mules. These acres became available for food production. And second, action was taken on a broad front -- by the Federal Government, by the States, by industry, and by farmers -- to improve our agriculture. Research finally began to receive the recognition it deserved.

Today, we can see the fruits of these efforts started in earlier years.

Let's take a look at what's happening in our feeds and livestock.

Research shaped each of these areas . . . and brought the two together to form the highly productive core of our vast agricultural industry. Well over half of our total farm income is from livestock and their products, and more than three-fourths of our farmland is devoted to producing livestock feed.

Breeders Contribute to Gains in Crops

As I follow the development of these feed crops, it seems to me that one of the most outstanding achievements is the work of our plant breeders.

Two plant breeders observed hybrid vigor early in this century and saw its implications for increasing yields of corn, or maize. They began crossing inbred lines of maize to produce hybrids . . . other scientists joined in the studies . . . and a broad cooperative breeding effort got underway in 1925. Hybrids began their phenomenal sweep across our country in the 1930's, boosting yields an average of 20 percent. Almost our entire commercial maize acreage is now in hybrids.

Much the same thing is happening to our grain sorghums. Just 10 years ago, plant breeders discovered a new male-sterile character that provided a simple, economical method of producing hybrid seed. Today, three-fourths of our grain-sorghum acreage is in high-yielding hybrids.

Our combined production of maize and sorghum totals approximately 4 billion bushels a year, or roughly 80 percent of our feed grain.

Plant breeders are also helping save our crops from production hazards such as diseases. For example, we've changed our oat varieties about five times in the past 25 years to meet newly emerging diseases and new races or strains of old diseases.

Then, there's our miracle crop -- the soybean. Although soybeans had been around the United States for more than a century, they didn't amount to much until we learned that their flowering and maturity are controlled by length-of-day. Since daylength varies from north to south, the adaptation of each soybean variety is restricted to a rather narrow belt running east and west.

It was apparent that we needed additional breeding material, so our plant explorers assembled from Asia the seeds of some 4,000 soybean selections. This unique bank of germ plasm has provided breeders with the genes for more than 20 improved varieties, including specific varieties for each zone where soybeans are grown commercially. These improved varieties produce 10 to 20 percent more beans, have a higher content of oil, stand more erect in the field, and can be harvested by machine more easily than the plants they replaced.

As a result, soybean acreage has increased from 2 million in 1927 to more than 28 million today, and yields have more than doubled. Soybean meal is now the dominant protein source in our formula feeds -- the feed industry could not have developed as it has without this crop.

So far in this discussion of our crops, I have emphasized the work of our plant breeders. Time does not allow us to cover the contributions of a multitude of other scientists who developed productive cultural

practices . . . controls for diseases, insects, and weeds . . . labor-saving machinery and equipment . . . effective fertilizers and chemicals . . . techniques for conserving our soil and water. Modern crop production depends on many related factors.

Our present crop output provides the feed base for our livestock industry, plus slightly over half the world's exports of feed grains. Thus, we are constantly in position to supply virtually unlimited quantities at competitive prices.

Nutrition Research Advances Livestock

Let's turn now to the development of our livestock. I am immediately reminded that much of our livestock had its roots here in Britain. Furthermore, much fundamental knowledge on protein and energy requirements of farm animals goes back to European research of more than a half century ago.

It's in the area of understanding nutritional requirements that my country has made perhaps its greatest progress in improving livestock production. Nutrition research has revolutionized the feeding of pigs and poultry and brought about major improvements in cattle and sheep feeding.

The basic discoveries include requirements for a dozen or more vitamins and nearly a dozen minerals. Of equal importance are the findings on energy, proteins, and -- for ruminants -- protein substitutes such as urea. Other research has developed the safe use of certain synthetic chemical materials, such as hormone-like products, which stimulate rates of growth and feed utilization.

Actually, it took a great deal of nutrition research to put our remarkable soybean where it is today. Soybean meal, though rich in protein, lacks certain other nutritional components that some animals need. Research

made it possible to compensate for these deficiencies. First, it was discovered that heat greatly improved the efficiency with which soybean protein is used by poultry. Among many other studies was one that established the need of vitamin B₁₂ for hatchability and chick survival.

Further research demonstrated the value of high-energy diets for broiler production, using feeds high in maize content. Energy content has more recently been increased further by addition of stabilized animal fat.

Studies of the fermentation residues from antibiotic production as a cheap source of vitamin B₁₂ led to another discovery -- the spectacular growth response of all livestock and poultry to antibiotics. They are now included in feed for all classes of young livestock.

Industry Helps Mobilize Feed Resources

As you can see, nutrition research has shown us how to use our abundant and favorably priced supplies of grain to feed animals at higher and higher levels. For example, commercial dairymen fed the average milk cow 44 percent more concentrates last year than in 1950.

But in the actual mobilization of these feed resources, producers owe a great deal to our commercial feed industry.

Tailor-made compounding, pelleting, and formula-mixing by commercial feed concerns have made concentrates available and easy to use. The industry has also helped widen the base of the feed supply by mobilizing a variety of byproduct materials to augment the grains. Prepared mixes now represent one-fourth of our total concentrate feed supply.

Naturally, these advances in animal nutrition have been accompanied by advances in many other phases of livestock production. Research has given producers effective breeding and selection techniques . . . methods of identifying and using superior breeding animals . . . tools to minimize

losses from insects, diseases, and parasites . . . planning and mechanization to save labor. All of these have been involved in achieving our significant gains in output per animal.

Perhaps the most dramatic combination of these elements has taken place in our broiler industry. In 1940, it took 13 weeks to produce a 3-pound broiler. Today, it takes only 9 weeks to produce the same size bird. What's more, it can be done on half the feed. This is why broilers have rapidly grown from a farm sideline to a big business with an output of nearly 2 billion birds a year. Incidentally, I understand you're finding that our combination works just as well over here.

Along with the crop and livestock research I've already outlined, my country also puts a great deal of effort into studies to develop new and expanded uses for farm products . . . to maintain quality and increase efficiency in the marketing process . . . and to discover the requirements of human nutrition.

Now I don't want to leave the impression that research has solved all the problems of American agriculture. We all know that research has a way of raising more questions than it answers, and our scientists are pushing ahead as fast as possible in every area. We feel that many of our questions will remain unanswered until we gain more knowledge of why and how life processes operate. So we are putting more and more emphasis on basic studies of the sort that probe deeply into the unexplored and unknown.

Efficiency, Quality Must Be Improved

Essentially, animal production problems in America are not unlike those facing British farmers. Over here, as in the United States, agriculture is under mounting pressure to improve production efficiency.

One approach is to improve farm animals. Take cattle, for example. In my country, we are striving to breed both dairy and beef animals that are more efficient. In England, you seem to be putting greater emphasis on developing milk and meat capacity in the same animal.

Another approach is to feed better. We particularly need to create a better feed supply at the farm level. I understand that you are not even satisfied with your world-famous pastures! One of my country's biggest research problems is to make our pasture and range more productive.

A third approach to greater efficiency is the whole area of mechanization on livestock farms. This can make labor more productive, reduce hard work, and increase output . . . on both sides of the Atlantic.

Another agricultural production problem our countries share -- along with the need to increase efficiency -- is the continual need to improve the quality, nutritional value, and healthfulness of animal products. For example, consumers want lean, tender meat . . . milk with more solids and less fat . . . and eggs that retain their initial high quality.

It is most important that we succeed in this quest for better agricultural products . . . more efficiently produced. It is important because these are the problems not just of farmers or feed mixers but of every man, woman, and child in your Nation and mine.

Agricultural research that helps to solve these problems is helping to protect the health and welfare of all our people. And this is vital to the Free World.

|||||
|||||

W 44
Apr. 24, 1962
copy 2

U.S. DEPT. OF AGRICULTURE
LIBRARY
MAY 2 - 1962

HOW AGRICULTURAL POLICY IS FORMULATED

I would like to add a cordial welcome to that you have already received from Dr. York and other officials of the Department of Agriculture. We are honored to have you with us.

You have come to Washington on a quest -- to gain a better understanding of your heritage as citizens of the United States. Your search is taking you along many diverse pathways -- to historic shrines and cultural events, into the arena of domestic politics and international affairs, and even into space technology.

This afternoon you have turned to that part of your heritage which you know from long association -- agriculture.

In the early days of our republic, a visitor from France -- Alexander de Tocqueville -- observed that, "Agriculture is perhaps, of all the useful arts, that which improves the most slowly among democratic nations."

Time has proved him wrong. What Tocqueville did not foresee was how the political inventiveness of American democracy would lead to improvements at a rate equal to and often exceeding those in commerce and industry and other useful arts.

Tocqueville did not foresee this, although he was one of the first to recognize that our democracy was marked by a political inventiveness then unknown in world history.

Even then, in the 1830s, there was a striking example of how our people would use this political inventiveness to improve agriculture.

Talk by Dr. Frank J. Welch, Assistant Secretary of Agriculture, before the Thirty-Second National 4-H Conference, Washington, D.C., April 24, 1962

One urgent need in those days was for crop seeds....seeds for the new lands being brought into cultivation, and seeds to replace those brought from Europe and found unsuited to our climate and soils.

Leading farmers -- Jefferson and Madison among them -- were convinced that the success of American agriculture depended on diversification. It called for the cultivation of economic crops not yet established here.

Congress took their views into account in 1838 and appropriated one thousand dollars for agricultural purposes. The money came from fees paid to the Patent Office and the funds were used by the Patent Commissioner to introduce and distribute crop seeds and to collect information on agriculture in the 1840 Census.

Land, Research, and Education

This year we are observing the Centennial of three events that demonstrate even more spectacularly the political inventiveness of American democracy.

I refer, of course, to the creation of the U. S. Department of Agriculture and the Land-Grant college system, and to the passage of the Homestead Act.

You know from your study of history and stories in your own families how free lands under the Homestead Act served as a magnet to draw families by the thousands across the nation ... how it helped our people settle the country, close the frontier, and win the West.

The organic act establishing the Department of Agriculture described its primary function as research and education. That is, it became the Department's responsibility "to acquire and diffuse among the people of the

United States useful information on subjects concerned with agriculture in the most general and comprehensive sense of the word."

A distinguished philosopher of political theory has pointed out that the Department of Agriculture was the first client-oriented department in our government. It was firmly based on science. And it represented a new set of relations between Federal and State governments.

The new colleges set up in the States under the Land-Grant plan came to be called "the people's colleges." They were open to all. They were not restricted to traditional educational programs but were free to experiment ... to modify their programs to fit immediate needs and to serve in changing times.

Many of you are now students of the State universities that grew out of the "people's colleges." Unquestionably, the great contribution of these schools is the large corps of educated men and women who fill posts of responsibility throughout our society.

The Department of Agriculture, the colleges, and the State experiment stations established a few years later gave our Nation the engine for generating progress in agriculture.

The great Federal-State network of research was the first in history to attack problems of agriculture across the broad spectrum of science. And very shortly, our scientists were finding solutions to problems that had troubled farmers through the ages.

An early milestone was the discovery that insects can transmit disease to warm-blooded animals. Department scientists proved that ticks carry cattle fever. They then went on to eradicate the disease. And the discovery paved the way for medical research to bring yellow fever, malaria, and other insect-borne diseases under control.

Agricultural scientists were learning many useful new techniques. The big hurdle was how to get farmers to put this new knowledge to use. The answer came through political inventiveness. Seaman Knapp supplied the ingenious method --- government support of demonstration and teaching through an Agricultural Extension Service and 4-H Clubs.

Each decade of this century has brought political inventions bearing directly on agriculture. The 1930s under the imaginative leadership of President Franklin D. Roosevelt brought many far-reaching ideas. These innovations gave our Nation a genuine soil-conservation program and a workable scheme for planning future land-use. They gave us the Rural Electrification Administration that has brought power to all of our farms. They gave us the credit and supervisory programs by which the Farmers Home Administration helps farm families gain a stronger foothold in the economy.

The Elements of a Political Invention

In each of the historic changes I have mentioned, you can find the three elements that characterize a political invention:

(1) Each change began with a felt need. Many people recognized that there was a difficult problem to be solved or a splendid opportunity to be grasped. They became concerned because our society did not have the machinery to do the job.

(2) Each change was the product of long study. The task of assembling the facts was turned over to the experts. These have generally been Congressional committees or people in the executive departments of government, or the colleges and universities. The experts were directed to bring the

facts together from every known source ... to get views from the people who would benefit from the change and those who thought they might suffer from it. As the science of statistics advanced, the experts have been able to bolster the facts with figures. The ingenious proposals that emerged from the findings were then discussed long and usually passionately by citizens across the length and breadth of the land.

(3) Each change represented an experiment. That is, there was no precedent for it in government. It meant we were ready to try a wholly new but apparently practical way of doing things.

It has been my privilege to be associated with one of the boldest political inventions of this century -- the Tennessee Valley Authority. A few years ago I served as one of the directors of T.V.A. I was a college student in the 1920s when Senator George W. Norris proposed that the government operate the hydro-electric dams at Muscle Shoals. The government had built the dams as an emergency measure on the Tennessee River during World War I.

Senator Norris was a Republican from Nebraska. At the time of his proposal he was the highly respected chairman of the Senate Committee on Agriculture and Forestry. His proposal was based on studies of the Tennessee River going back a hundred years. The first survey of Muscle Shoals was made in the 1820s at the recommendation of John C. Calhoun, then Secretary of War.

In other words when Senator Norris made his proposal, it was backed by overwhelming evidence that we had the technological means to use the vast resources of the Tennessee River. And the evidence made it clear that only the Federal government had the legal and economic potential to get the job done.

Even so, the Norris proposal aroused furious opposition. The bills passed by Congress were vetoed by President Coolidge and President Hoover.

At the same time, the Senator's ideas were being discussed and gaining support across the nation ... more and more support. And in 1933, President Roosevelt not only welcomed the idea. He did more. He enlarged upon it and created the Tennessee Valley Authority.

You are familiar with its spectacular record. Within 10 years it had become one of the wonders of the world. As one fluent writer has said,

"T.V.A. was so situated and its authority was so used that it ceased very early to do things for people and passed into the phase of enabling people to do things for themselves. It came to stand for more than a single kind of power. It was the power of man over his environment -- of all men, of little men as well as big men, of unlettered men as well as the graduates of the universities. It was co-operative power."

What of the Future?

Today, science and technology are giving man new powers over his environment ... powers once measured only in his dreams.

Very likely, Friendship 7 and the other space ships are the symbol that comes to mind when I speak of scientific achievements. It is true that they represent a fantastic development.

But it is no more remarkable than one you know first-hand -- the magnificent achievement of our agriculture. The productivity and efficiency of our agriculture is also one of the wonders of the world.

In the minds of many people around the world, our great farm productivity overshadows the flights into space as a scientific achievement. These people recognize a productive agriculture as the basic element for sustained progress on earth and flights to the stars.

It is in agriculture, above all, that the Western world stands superior to the best the Communist world can presently achieve. For example, Russia plants a third more acreage than the United States. She has seven times as many people engaged in farming as we do. Even so, U. S. farm production exceeds that of the U.S.S.R. by 80 percent.

Less than 9 percent of our population is engaged in farming. Yet our farmers are so efficient that one farmer produces enough to meet the needs of 26 people -- 23 of his own countrymen and 3 people somewhere else in the world.

The great productive power of our agriculture implies great responsibility for us as citizens ... responsibility to use that power wisely. It raises problems that are exceedingly difficult and complex and that hold, at the same time, challenging opportunities.

Briefly, here are the needs as we see them ... the facts as they have been delineated in long-time studies ... and as they are interpreted by President Kennedy and Secretary Freeman.

Agriculture has moved from an economy of scarcity to an economy of plenty. One recent study predicts that by 1980 American agriculture will be able to meet all of its commitments at home and abroad on 50 million fewer acres than are now in cultivation.

We must face the technological revolution in agriculture honestly and realistically. The essence of the farm problem is to find ways to manage our abundance so as to make full use of this magnificent resource ... ways to manage our abundance that fit into the framework of our democratic heritage.

The policies drawn up by Secretary Freeman have been formulated in the light of four goals. These are:

- (1) A goal of abundance that permits us to expand food consumption to those whose food supplies are short ... to expand food consumption in this country and abroad;
- (2) A goal of balance so that we adjust the production of agricultural commodities now in serious oversupply;
- (3) A goal of conservation so as to safeguard the claim of future generations to our natural resources;
- (4) And a goal of development so as to strengthen economic opportunities for our rural people.

You will note that these goals go beyond the needs of our own people to those of mankind. They recognize that there is no purely domestic question in a world stockpiled with nuclear weapons ... in a world in which John Glenn can orbit the earth in less time than our first President could ride horseback from Mount Vernon to the site he chose for our Nation's capital.

One of the stirring things about this world view of agriculture is the opportunity it offers to the people in your generation ... that it offers to highly qualified people like yourselves.

The market for skills in food and agricultural technology extends to the four corners of the globe. The demands of this market are steadily rising as people in the new nations see the promise of technology and get organized to invest in those skills.

The world seeks your talents because you offer skills plus. The plus is your heritage that says to accept the democratic ideal is to incur responsibility.

As 4-H Club members you are learning how to make democracy a way of life at the same time you are learning skills in food and agriculture. You are learning self discipline. You are taking part in public affairs. You are finding that for progress in Club growth you must be highly practical ... you must be willing to hear all views ... and must learn how to make constructive use of compromise. Even when you don't vote with the majority, you are willing to abide by its decisions. You know that by creative criticism you can help to improve affairs.

These attitudes are the essence of democracy. They constitute the heritage that has prospered our commonwealth. They offer hope to the world.

It's a special pleasure to come back here to my native State for an occasion like this. I appreciate the opportunity to join with you in expressing to Dan Clinton this well-deserved tribute for his long and distinguished service as your county agricultural agent.

We could never give a public servant like Dan Clinton any financial reward that would begin to repay him for his many contributions in service to his fellow man. But I am sure that no material recompense would have matched the satisfaction he has experienced in working with you people over the last three decades. And this evening, you are conferring on him the ultimate reward -- public recognition and thanks for long years of dedicated, unselfish service.

I am deeply impressed with the significance of this occasion. It is gratifying to meet here not only the agricultural leaders of Harris County but also representatives of nearly every facet of life in this remarkable metropolitan area.

There seem to be a lot of people around who remember the part Dan Clinton has played in such activities as organizing the Houston Farm and Ranch Club . . . building the Houston Fat Stock Show into a major event . . . and, indeed, in developing the Farmers Co-Operative Market where we are meeting tonight. Those are just a few samples of the leadership he has provided in making Harris County one of the banner agricultural counties of this great agricultural State.

This record of outstanding achievement in the agribusiness economy of this county exemplifies the importance of farm and city working together as a unified team.

Talk by Dr. Frank J. Welch, Assistant Secretary, U. S. Department of Agriculture, at appreciation dinner for retiring County Agricultural Agent Dan Clinton, Houston, Texas, May 7, 1962.

I saw ample evidence of past achievements all about me as I came into your great city today. I understand that Houston has more than tripled in size in the last 30 years, to become America's seventh-ranked city -- a burgeoning metropolis of a million people. You have come to be known around the world as producers of oil and gas . . . as manufacturers of chemicals, machinery, and tools . . . as shippers of agricultural and industrial products.

Yet, out beyond the city limits of Houston, we find more cattle than in any other county in Texas. We find large acreages of rice. And we find farmers producing milk, eggs, chickens, vegetables, cotton, and peanuts. The fact is that three-fifths of the county is still in farms.

Changes in Harris County Agriculture

Big changes have been taking place out there, too, since Mr. Clinton arrived in 1929. Many of you here this evening know from personal experience what has happened.

Take rice, which has replaced cotton as your big crop in Harris County in the last 30 years. Your rice farmers were raising less than 4,000 acres in 1929 and averaging 13 barrels to the acre. Now, they're raising better than 40,000 acres and getting 20 barrels to the acre.

They've completely changed over to new rice varieties that are more resistant to disease and better adapted to mechanized harvesting. I understand that you may be on the threshold of even higher yields through very-early-maturing varieties that produce two crops a year from the same field. Fertilizer has come into wide use and does much to increase yields. Airplanes are being used to distribute seed, fertilizers, insecticides, and herbicides. And there has been a tremendous saving in manpower as methods have been developed to harvest by combine, dry the rice artificially, and handle and store it in bulk.

Or look at your livestock industry. You're raising well over a third more cattle in Harris County today than you were in 1929, and doing it with far greater efficiency.

Dairying has also expanded in Harris County, in response to the increasing demand for milk, and to your own local cooperative management of marketing and distribution. Farmers are producing substantially more milk of better quality than they were in 1929 and doing it with only three-fourths as many cows.

These changes did not just happen -- they are the direct result of the fruits of research, plus the efforts of Dan Clinton in helping farmers translate this new information into practical reality here in this community.

Our Country's Agricultural Revolution

What we have seen here on the farms of Harris County is, of course, part of the fantastic agricultural revolution that has swept this country.

At a time when most of the globe is still struggling against hunger and malnutrition, American agriculture has forged ahead to produce one of the most significant breakthroughs in human history.

Our rapidly developing agricultural abilities -- which are reflected in the accomplishments that you know so well here in your own county -- have made an enormous contribution to this Nation's total economic growth. Large quantities of manpower are available for development of our business and industry because less than 8 percent of our labor force is now engaged in producing food and fiber.

These gains in farm productivity stem directly from the amazing progress we have made in agricultural science and technology, and from our ability -- working through Dan Clinton and his counterparts all over the country -- to help farmers put that progress to practical use on their farms.

Centennials for Two Unique Institutions

Underlying this progress are two unique institutions that had their beginnings exactly a hundred years ago this month -- the U. S. Department of Agriculture, and the Land-Grant colleges and universities. Across the Nation, we are celebrating the centennial of their founding. Both have made indispensable contributions to the development of American democracy.

In establishing the Department of Agriculture a century ago, Congress made research and education its main jobs. That is, it became the Department's responsibility "to acquire and diffuse among the people of the United States useful information on subjects concerned with agriculture in the most general and comprehensive sense of the word." Today, the Department continues to serve every one of us -- through the food on our tables . . . the fibers in our clothes and home furnishings . . . the wood in our houses . . . the health and welfare of our families.

Under the Land-Grant Act, Congress set aside Federal land that was sold to establish endowments for schools like your own Texas A & M. These "people's colleges," as they came to be called, made higher education available to all Americans. Today, a fifth of all our college students are enrolled in Land-Grant institutions.

It soon became apparent that these early Land-Grant colleges lacked an adequate scientific basis for college-level instruction in agriculture. This need resulted in the establishment of our State experiment stations about 75 years ago. Congress offered Federal support to a research staff in each State to investigate basic and applied problems in agriculture.

But something was still lacking. Although we had research at the national and State levels . . . and teaching in the Land-Grant agriculture colleges . . . we didn't have an effective way of getting research results out to people and into practice.

Establishment of Extension Work

It was in 1904 that USDA assigned Dr. Seaman Knapp -- a distinguished Texan -- to see what could be done about "bringing home to the farmer, on his own farm, information that would enable him to grow cotton despite the presence of the weevil."

Dr. Knapp established headquarters right here in Houston, and he and his co-workers succeeded in enlisting 7,000 farmers to demonstrate to themselves -- and others -- that boll-weevil control was possible and profitable. The demonstration was highly successful. Dr. Knapp's philosophy was that "What a man hears he may doubt, what he sees he may possibly doubt, but what he does himself he cannot doubt."

This philosophy led to the establishment in 1914 of the Cooperative Extension Service, which opened up a great new channel of communication between farmers and scientists.

Extension provides a way for county, State, and Federal governments to share financial responsibility for supporting county Extension agents. They are backed up by the State Extension service of a Land-Grant college or university, with its specialists and ready access to the latest research of the experiment stations. In addition, they are backed up by Federal Extension, with its liaison among the States, and by research and other agencies of the Department.

These institutions . . . working together . . . have been an important force in the development of our agriculture. But their influence counts for little until their findings and recommendations are translated into local action and progress with the help of people like Mr. Clinton.

Perhaps, in reviewing these achievements of the past, I have given the impression that practically all our problems have been solved. The fact is, of course, that what we have solved up to now is -- for the most part -- the easy problems. Most of those that remain for the future are far more difficult.

We face some formidable challenges in this country, and I want to discuss only two of them with you briefly.

Extension's Challenge of Change

The first challenge concerns our Extension effort itself. Extension has served our people well. As the country has developed, Extension has broadened its programs -- not because of administrative decisions, but in response to the demands of the people.

Yet, our society continues to change. Once it was nearly all rural -- now it is mostly urban. The question I raise is this: Will we see that Extension keeps pace with change by further broadening its service . . . or will this magnificent capacity to organize people for understanding and for action be allowed to wither in many communities?

The rich and varied resources for research and education in today's Land-Grant university find application among all the people of the State. Extension, as the off-campus educational arm, might well represent the institution in bringing this body of knowledge to bear on all facets of a community's economic and social need. This could include such matters as rural zoning . . . marketing efficiency . . . health problems . . . economic and social adjustments -- in fact, any area where public understanding and action are needed, and where

the Land-Grant university can make a contribution.

The extension service -- as exemplified by your own Dan Clinton -- is well qualified to organize interested groups for effective action, and to provide educational leadership in supplying these groups with essential information.

Our challenge is to use the total capacity of our Land-Grant institutions in the service of the people. I believe we should do no less.

The Challenge of Abundance

The second challenge I want to present is found, paradoxically, in our agricultural abundance. The great productive power of America's agriculture raises problems that are exceedingly difficult and complex. In short, we have been producing more of some commodities than we can use, and this has driven prices down to the point where many farmers aren't getting a fair return for their capital and labor.

Because of the interdependence of agriculture and the rest of our economy, this is a problem not of farmers alone but of all our people.

We must face the technological revolution in agriculture honestly and realistically. I believe the remedy to this situation lies in finding ways to manage our abundance so as to make full use of this valuable resource. . . in finding ways to enable farmers to share fully in the fruits of their technological achievements.

The recommendations of President Kennedy and Secretary Freeman have been formulated in the light of four goals. These are:

1. A goal of abundance that permits us to expand food consumption to those whose food supplies are short . . . to expand food consumption in this country and abroad.

2. A goal of balance so that we adjust the production of agricultural commodities now in serious oversupply.

3. A goal of conservation so as to safeguard the claim of future generations to our natural resources.

4. A goal of development so as to strengthen economic opportunities for our rural people.

Our challenge is to manage our abundance in the long-range interest of the whole Nation. I believe that the American farmer stands at the crossroads -- and that all the rest of us stand there with him. It is vital that we take the right road.

Proving Our System Will Work

Both the challenges I have presented -- to develop the full capacity of our Land-Grant institutions through Extension . . . and to learn to manage our agricultural abundance wisely -- are really part of a larger challenge that confronts this great country of ours today. This is the challenge of proving that we can solve our social and economic problems within our democratic system.

I am confident that we will succeed, for American democracy has a remarkable tradition of political inventiveness. We've seen it in the creation of USDA and the Land-Grant college system, with their broad and varied program of information and service to all the people.

With whatever program and institutional arrangements we may have, however, the most important ingredient in the whole complex is that of high competency, dedicated leadership, and unfaltering devotion to public service on the part of those who must make the program viable and productive. So long as we have a reasonably full complement of Dan Clintons as part of our

agricultural team, I am sure that we shall have the ability, the vision, and the will to meet the challenges of this new age -- and meet them effectively under freedom.

And now, Dan, I should like to add my personal thanks and that of the U. S. Department of Agriculture to the thanks of the host of friends assembled here this evening, for a job superbly well done. I hope that you will find the time to do all those things you have wanted to do through the years but which a long professional life would not permit. And I hope sincerely that the years of retirement will be long and pleasant ones indeed.

Washington, May 14, 1962

Remarks by Assistant Secretary of Agriculture Frank J. Welch at the opening of the U. S. Department of Agriculture Centennial Photo Exhibit, May 14, 1962, Washington, D.C.:

As Chairman of the Department's Centennial Committee, Mr. Secretary, I am proud to present to you and the public, this outstanding photography exhibit depicting a hundred years of agricultural progress.

In this exhibit, entitled "The Changing Faces of Our Land," we meet the American farmer from the time he followed the plow on foot to the time when he rides mighty machines over the land. We meet, too, all the other people of agriculture -- the scientists, the makers of agricultural supplies and the processors of food and fiber -- the people who have wrought such great changes on the faces of our land during the last hundred years -- more changes in the last generation than in all the time before. We see the consumer as well as the farmer, the interdependence of the people in the city with the people on the land. We note that the fortunes of one are tied up with those of the other.

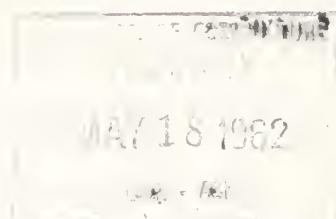
This exhibit of over 300 photographs was selected from more than 600,000 taken by or in the custody of government agencies, State historical societies and outstanding individual photographers. It includes the work of many of the greatest American artists with the camera, among whom are several formerly or now connected with the Department.

This is obviously the result of the efforts of many, many people in addition to the photographers. The search and selection process took over a year. The final collection is unique. There was no contest nor competition. The final choice was arrived at in an attempt to balance the agricultural story with photographic excellence. Artistry had to be combined with accuracy. We believe that neither was sacrificed to the other. Most of the pictures tell a story in themselves.

Brought together, however, we see unfolded here a great story of progress and productivity as an unprecedented scientific, technological, and social revolution burst upon the land.

The exhibit will remain here for one month, then go on an extended tour of the United States that will take nearly two years. The Land Grant Colleges and Universities are particularly interested. The demand from every part of the country has been so tremendous that two duplicates are already in the making.

I am now honored, Mr. Secretary, to present this exhibit to you for its formal dedication.



125-121
W 44
Cop. 2
June 2, 1962

INSTITUTIONS OF THE PEOPLE

This is a privilege to visit here today with so many of you fine people in the great dairy State of Vermont. I know you're supposed to have more cows than people in Vermont -- but after being in Enosburg Falls for the Franklin County Dairy Festival, I'll always wonder about that!

Many of you have journeyed here from a distance. I'm sure you, too, are impressed with the scope and vigor of this Festival.

To you members of the Lions Club, to County Agent Walter Rockwood, to all of you who have had a part in organizing and building this outstanding event . . . I offer my heartiest congratulations. Here is ample evidence of a healthy community spirit -- a spirit worthy of one of the leading dairy counties of our Nation.

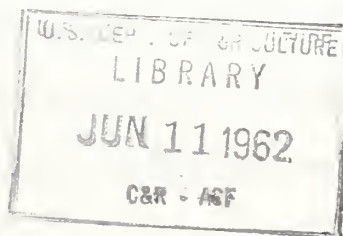
This Festival, which obviously reflects the dynamic interest and support of every segment of this community, pays tribute to a most important industry.

Dairying is Vermont's biggest business. It provides 4 out of every 5 dollars of farm income in this State. For the Nation as a whole, dairying brings in twice as much cash income as any farm crop.

And dairying is important to the Nation's many agribusiness workers -- those who supply farmers with seeds, feed, fertilizer, and equipment, and those who process and distribute dairy products.

But -- above all -- dairying is important to the welfare of every person, young and old, across America.

Talk by Dr. Frank J. Welch, Assistant Secretary, U. S. Department of Agriculture, at the Franklin County Dairy Festival, Enosburg Falls, Vermont, June 2, 1962.



President Kennedy himself not long ago described milk as "our most nourishing food" and "an important aid to good health." He told a National Conference on Milk and Nutrition: "If we are to be a vigorous and vital Nation as we all desire, then of course we must depend on the consumption of a balanced diet. And milk must be a part of it."

This remarkable American capacity for production and distribution of goods is, indeed, a wonderful resource. Underlying it, however, is our greatest and most basic resource -- the American people. It's our people . . . and the institutions that serve them . . . that I especially want to talk with you about today.

Morrill Pushes Through Land-Grant Act

The name of one person in particular immediately comes to mind: the illustrious Vermonter, Justin Smith Morrill. That name will be repeated round the Nation and beyond as we pause this year to celebrate the centennial of one of the most unique and dynamic institutions that America has produced: the Land-Grant College system.

It was just 100 years ago that Justin S. Morrill almost singlehandedly pushed through Congress the Land-Grant Act. This legislation, which President Abraham Lincoln signed into law on July 3, 1862, has come to be known as the cornerstone of higher education in this country.

Justin Morrill himself was forced to leave school at 15 for want of means. He was the son of a blacksmith and farmer down at Strafford.... the eldest in a family of 10 children. Years later, Justin Morrill said that his mother taught him the perseverance that enabled him to push through the Land-Grant bill: She made him stick to the churning . . . even when the butter did not come easily . . . until he got results!

As a young man, Morrill used every opportunity to read. He made a success in business and in 1854 was elected to Congress. He served in Washington 44 years -- 12 years as a Representative and then 32 years as a Senator. He was known by his contemporaries as the "Father of the Senate."

This distinguished son of Vermont left his mark on Washington. To him we owe the establishment of the world-famed Library of Congress. Also the Smithsonian Institution, the Washington Monument, and the Hall of Statutes were in large part his accomplishments.

But his greatest and most lasting monuments are the 68 Land-Grant Colleges and Universities across this country, including your own University of Vermont. The Land-Grant Act set aside Federal land that was sold to establish at least one such school in each State.

Other people had been talking and writing about new ideas for higher education, and a movement had long been underway to establish agricultural and technical schools. But it was Morrill who turned these thoughts into reality.

The "people's colleges," as Land-Grant institutions came to be called, made higher education available to all Americans. These schools were, in Morrill's own words, "designed to largely benefit those at the bottom of the ladder who want to climb up." I can think of no single institution that has contributed more fruitfully and permanently to the development of our natural resources and to the enlightenment of our people generally. For instance, Land-Grant Colleges and Universities enroll more than 20 percent of the college students and grant 40 percent of the doctoral degrees in this Nation today.

Justin S. Morrill is truly the "father of the American educational revolution," and it is fitting that his homestead at Strafford is to be dedicated this fall as a national shrine.

Congress Establishes "People's Department"

Establishment of the "people's colleges" was only one of the momentous, history-making events that marked the year 1862. A few months earlier -- on May 15, to be exact -- President Lincoln had signed a bill setting up what he called the "people's department" -- the United States Department of Agriculture.

Here, again, we owe a debt of gratitude to Justin S. Morrill. He lent his full support to the Department bill and was influential in securing its passage.

These two institutions of the people were to join hands . . . over the century that followed . . . to create an agricultural system without equal in the history of man.

But the new Department and the new colleges had a long row to hoe, for they were born into a world of scarcity. Our Nation was straining to expand. Agriculture was just beginning to change from subsistence to commercial operation. Even with 60 percent of our workers engaged in farming, we couldn't meet the growing demand for food and fiber. We needed more and more agricultural products, and we also needed to expand the margin of efficiency that would make possible the release of agricultural workers for industrial and service functions.

So Congress, in establishing the Department of Agriculture, made research and education its main areas of activity. That is, it became the Department's responsibility "to acquire and diffuse among the people of the United States useful information on subjects concerned with agriculture in the most general and comprehensive sense of the word."

Research and education continued as paramount concerns down through the years, but the Department was given new responsibilities from time to time in response to changing needs and the demands of the people.

For example, USDA regulatory workers are now standing guard at our borders to turn back foreign diseases and pests of agriculture, as well as helping to eradicate the diseases and pests we already have. Among the many other activities, the Department provides improved rural credit facilities, technical advice and service for soil conservation, and loans for rural electrification cooperatives. And USDA has been assigned responsibility for consumer welfare in such activities as inspection of meat and poultry, and grading of meat, fruit, and vegetables.

Much of the Department's service to the people has been performed in partnership with the Land-Grant Colleges. One of the most significant advances took place about 75 years ago.

Cooperative Research, Extension Are Set Up

It had become apparent that these early colleges lacked an adequate scientific basis for college-level instruction in agriculture. So Congress offered Federal support for a research staff in each state to investigate basic and applied problems in agriculture. This resulted in the establishment of a nationwide system of experiment stations in cooperation with the Department.

But something was still lacking. Although the Nation had agricultural research at the national and State levels . . . and teaching in the Land-Grant agricultural colleges . . . we didn't have an effective way of getting research results out to people and into practice..

The answer was eventually to grow out of our experiments with farm demonstrations. Here, a farmer could see the results of improved practices right on his own farm. From this work evolved the agricultural representative or county agent. And finally, in 1914, Congress provided for nationwide agricultural extension work in cooperation with the State Land-Grant Colleges.

Over the years, these State and Federal institutions . . . working together to apply scientific research to farm problems . . . have been a vital force in shaping the fantastic agricultural revolution that has swept this country.

At a time when most of the globe is still struggling against hunger and malnutrition, American agriculture has forged ahead to produce one of the most significant breakthroughs in human history. We grow plenty for our own people and still have some left over to help feed a hungry world.

Furthermore, our rapidly developing agricultural abilities have made an enormous contribution to this Nation's total economic growth and level of living. Large quantities of manpower are available to run our business and industry because it now takes less than 8 percent of our labor force to produce our food and fiber.

County Experiences Agricultural Revolution

But I need not say more -- you people have been in the midst of this agricultural revolution right here in Franklin County.

While your farms have been decreasing in number, they are getting larger, more specialized, more productive and more efficient.

Just in the past quarter of a century, production per cow has increased by more than a half on Vermont dairy farms, and output per worker has doubled.

In the 10 years between 1949 and 1959 in Franklin County, the value of milk sold per farm increased by 87 percent.

You are well acquainted with the reasons behind these advances: more efficient feeding, especially in the use of home-grown roughage . . . artificial breeding and Dairy Herd Improvement Association recordkeeping . . . programs to control mastitis and improve milk flavor . . . more effective marketing methods . . . new fertilizers, chemicals, medicines, and equipment. And you could name others.

You have achieved a high degree of success here in Franklin County. And most of you have done it by combining the fruits of research and education with your own ability and initiative on an owner-operated family farm. This is an unmatched and fundamental combination. It has brought America far in these hundred years just past, and it is indispensable for the times ahead.

Nation Is Challenged by Abundance

And yet, we must not overlook the fact that conditions are changing. The combination that worked so well for yesterday is not, by itself, enough to insure our people a stable, productive agriculture for tomorrow. The paradoxical fact is that we are challenged today by our very abundance.

The great productive power of America's agriculture raises problems that are exceedingly difficult and complex. Briefly, we are producing more of some commodities than can be sold in the market place at prices that are tolerable to the producers. This has tended to drive prices down to the point where many farmers are not able to get adequate returns for their capital and labor.

Because of the interdependence of agriculture and the rest of our economy today, this is a problem not of farmers alone but of all our people.

We must face the technological revolution in agriculture honestly and realistically. I believe the remedy to this situation lies in finding ways to manage our abundance so as to make full use of this valuable resource . . . in finding ways to enable farmers to share fully in the fruits of their scientific and technological achievements. A Nation as well fed, well housed, and well clad as our own certainly should be satisfied with no less for those who have worked so diligently and effectively in making our agricultural economy the envy of the world.

Four Agricultural Goals Suggested

The recommendations of President Kennedy and Secretary Freeman have been formulated in the light of four goals. These are:

1. A goal of abundance . . . to permit us to expand consumption of our farm products among people whose supplies are short, both in this country and abroad.
2. A goal of balance . . . so that we adjust the production of agricultural commodities now in serious oversupply.
3. A goal of conservation . . . to safeguard the claim of future generations of Americans to our natural resources.
4. A goal of development . . . so as to strengthen economic opportunities for our rural people.

Our challenge is to help bring about better use of both our natural resources and our human resources in the long-range interest of the whole Nation. If we are to meet this challenge, it is imperative that we have public policies and institutions that are consistently and realistically related to rural problems and opportunities as we know them today.

I believe that the American farmer stands at the crossroads in 1962 -- and all the rest of us stand there with him.

As we look back over the hundred years just past, we realize that Americans of 1862 stood at the crossroads, too. Fortunately for all of us, courageous leaders like Abraham Lincoln and Justin S. Morrill faced up to the realities of the day and our people moved ahead.

And so it must be in 1962. We cannot afford to falter, for agriculture is the mighty force that undergirds our Nation at this critical moment in history.

I believe the American people have the knowledge and the will to see that our agriculture continues to be progressive, dynamic, and productive. I believe we can look to the future with hope and expectation of an even greater tomorrow.

##

280.37

W44

June 7, 1962

Page 2

AGRICULTURE'S NEED FOR A BALANCED RESEARCH PROGRAM

JUN 18 1962
GSA - ASF

I am honored to represent the U. S. Department of Agriculture at the 22nd American Cotton Congress and to have a part in this program.

I would find it difficult to turn down an invitation to speak in behalf of research to friends of long standing in the cotton industry. And I should like to note here that your traditional, vigorous, and effective support of agricultural research has never been narrowly focused on cotton. You have given strong and aggressive support for an adequate, balanced research program for all facets of agriculture.

One of the distinctive features of our country can be found in the many voluntary societies that, in the past 150 years, have marshalled public support for research and education.

The American Cotton Congress is in this great tradition. The pattern was set by the agricultural societies to which Jefferson, Franklin, and Madison belonged. It has been maintained by thoughtful, public spirited men across the country and through the years.

In 1962 we are paying a special debt of gratitude to the agricultural societies of the mid-nineteenth century. They laid the groundwork for the two institutions most closely identified with agricultural research and education -- the United States Department of Agriculture and the Land-Grant College system. Both were established in 1862.

Talk by Dr. Frank J. Welch, Assistant Secretary, U.S. Department of Agriculture, before the American Cotton Congress, Harlingen, Texas, June 7, 1962.

This year we are celebrating the centennial of these institutions. I'm sure you will agree with me that they have brought us wealth of immeasurable value. For they have given us the means to expand agricultural knowledge and to apply it for the welfare of mankind.

The expectations of 1862 have been achieved. They have been realized beyond the most extravagant dreams of those who created the new institutions.

Yet, we find that many of the problems that concerned agricultural leaders a hundred years ago are still with us today. We're concerned with many of the same difficulties even though we raise the questions in a vastly different setting or context.

For example, the task of building farm markets never ends. Nor does the struggle to keep farm incomes in pace with the growth of our economy. Nor can we say that our responsibilities for the wise use and conservation of the natural resources that bless our Nation are any less today than a century ago. The truth is that our responsibilities have increased with the growth of knowledge and the pressing and dynamic adjustments that this knowledge of science and technology imposes upon us.

The history of U. S. agriculture over the past century, however, demonstrates that difficult problems need not be obstacles to progress. When they are faced realistically with the best knowledge of the day, and when they are attacked courageously, hard problems push us to new heights.

To use an analogy our grandfathers understood -- these problems are the steam in the engine of progress. Or as our grandchildren will probably say -- these are the propellants that move us into the space age.

A Look at the Recent Past

Let me illustrate with an example from recent history.

In the preparation of this talk, one of my points of reference was a study completed 15 years ago. It was a report for the sub-committee on cotton of the House Committee on Agriculture of the 80th Congress.

I had the privilege of serving as chairman of the group that made the report. Our study was designed to give a comprehensive picture of agricultural and economic problems of the Cotton Belt at the close of World War II.

Fifteen years ago, much of the technology now a commonplace in U.S. cotton production was just coming into use. For example, in 1947, mechanical harvesters were a rarity in much of the Cotton Belt. Chemical weed killers had not begun to replace the man with a hoe. Most growers depended on calcium arsenate for boll weevil control. Investments in fertilizer were only a fraction of those now made. Irrigation was limited to the far West. Much of the gin equipment throughout the Cotton Belt had been used for 50 years or more. Our techniques for measuring cotton quality were slow and time-consuming. And the results gave only a partial picture of yarn strength and fiber performance.

The 1947 report, of necessity, looked back to economic activities of the pre-War era -- the period between 1935 and 1942 -- as well as looking ahead to discern what the future might hold.

When we made the study, it was still too early to gauge the great reservoir of domestic buying power that had been built up during the war years. We had no accurate measure of the vast needs for fiber and oil around the world as the nations destroyed by war began to rebuild.

(more)

USDA 2064-62

Thus, we underestimated the markets in prospect for U. S. cotton in the 1950's. We did not underestimate the impact of the new technology on the cotton industry nor the social consequences.

It was clear that the new technology, then coming into use, would require bigger farms, more capital investments, and improved managerial skills.

The new technology called for improvements throughout the marketing system. One particularly important aspect was the need for more knowledge about the ultimate user of cotton. What appealed to the consumer and how could cotton be promoted most effectively in the marketplace?

It was clear that the Cotton Belt would need to strengthen the institutions that serve an effective society in an age of technology.

There would have to be significant improvements in research facilities and programs, expanded educational services including the Extension Service, and improved and expanded credit facilities.

We recognized that the change-over to the new technology would require imagination, self-discipline, and cooperation of a high order.

Looking back 15 years, we marvel at what has been achieved. Researchers, growers, ginners, brokers, and those who operate the mills and presses have joined forces to develop quality products and build markets at home and abroad.

A Look into the Future

But with all the progress that has been made, the task is not done. All of us are keenly aware of the problems facing the cotton industry today. They are complex, difficult, and far-ranging.

(more)

USDA 2064-62

Stated broadly, our concern is much the same as it was in 1947. It is to devise means for producing cottons that pay adequate returns to the farmer and that meet competition at home and abroad.

The focus in the marketplace is on price and quality. This means that the prospects for U.S. cotton markets hinge, to a great extent, on two things: our ability to reduce costs of production and marketing, and on our skill in supplying cottons of assured quality.

I believe you will agree with me that we haven't gone as far as we can go . . . given the support of a sound public policy and a research program that is balanced, aggressive, and imaginative, and that is geared realistically to the problems and requirements of today.

This brief review of problems, progress, and prospects through research and development during the past decade-and-a-half merely provides the backdrop against which we may now focus briefly on the profile of balanced research for the future.

A well-balanced research program for the future will reflect the dynamics of an explosively changing agriculture. It will take into account the Nation's concern with the many problems in agriculture whose solutions lie in basic biology. For illustrative purposes I refer to water storage and loss, air pollution, population dynamics, and the life processes.

Agricultural science includes virtually all traditional scientific disciplines. It can be as intricate as the examination of the electrons within a single cell. It can be as broad as the study of social and economic adjustments to meet the demands of a changing world. It is distinguishable as agricultural science only because the research is conducted in close relationship to the industry.

Agricultural scientists obtain information and develop concepts that help solve both practical and theoretical problems. A finding in basic research may have scores of applications. For example, dicumarol, the drug used to prevent blood clotting was discovered by scientists doing research on cattle.

The urgent need in agricultural research today is for fundamental studies by which man expands his knowledge of the forces of nature. And a major task in the organization of research is to shift the emphasis increasingly to the basic studies.

At the same time, we must not overlook the fact that there remain many currently pressing programs that require continuing vigorous applied research. I shall not attempt to detail the specific research activities that are needed across the broad spectrum of science. You know the specific areas of need.

Some of our difficulties in planning research are associated with sentiment against an expansion of developmental work -- or applied research -- at a time when we are so heavily involved in the application of adequate and realistic supply management programs at prices tolerable to farmers and consistent with the economic health of agriculture as one of our basic industries. Yet these studies are essential if we are to find ways to reduce the costs of production and to improve the quality of the products.

In my judgment, more knowledge -- not less -- is essential in farm or production research. To reduce research in an effort to cooperate with supply and demand problems will, in the long run, aggravate the situation. Cotton would be among many agricultural products that would lose ground in the highly competitive markets where they now sell.

We need to recognize, however, that current attitudes in favor of holding the line or reducing farm research have become a barrier to those who seek public funds for research proposals. This is true not only on the Federal level but also in the States.

In addition to our concern about content, however, we probably need to recognize that a well-balanced, realistic research program with increased emphasis on basic studies suggests that the organizational framework of agricultural research needs to be reexamined. Traditionally, the research program in agriculture has been oriented toward commodities; that is to various crops and kinds of livestock.

As we give more emphasis to basic studies, it becomes increasingly apparent that we need to change the organizational structure. Instead of research units that are oriented to the commodity approach, we need units that are oriented to the scientific disciplines -- for illustration, to biochemistry, entomology, and plant pathology and related disciplines.

You will be interested in knowing that Secretary Freeman has recently appointed a panel of distinguished scientists to advise with him on a balanced and effective research program.

The panel is chosen from the various scientific disciplines on which agricultural technology draws. And the work of this distinguished new committee will complement that of the Agricultural Advisory Committee set up under the Research and Marketing Act of 1946.

The appointment of the new committee follows a recommendation by a special task force on science and agriculture. This group took particular note of two things in their analysis of science and agriculture.

First, investments in agricultural research have paid large and continuing returns in national economic growth. Returns from the support of agricultural research is estimated between 35 and 170 percent a year.

The second point to be considered is this. Although the advances in agricultural technology have been an impressive source of national economic growth, it should not be assumed that a majority of the benefits go to the farm people.

Expenditures for agricultural research serve the nation, but the benefits go primarily to consumers. Moreover, the national benefits are partially lost unless the economy grows rapidly. The growth must be rapid enough to maintain full employment and to induce substantial shifts of labor and capital from agriculture to other sectors of the economy.

The accumulation of surpluses and the adverse economic circumstances of many farm people indicate that the necessary adjustments have not been achieved. Some of the fruits of technological progress have not been harvested.

We have very briefly and sketchily given special recognition here today to the importance of a balanced agricultural research program. It is important-- in fact, basic -- to the health and welfare of all our people.

But under the circumstances in which we find ourselves, research is not enough to insure a stable, productive agricultural economy. There are two other important and necessary ingredients.

New Policies to Manage Abundance

The first of these is a better understanding on the part of the people generally of the importance of agriculture to the comfort and welfare of the Nation -- not only in terms of providing us with food and fiber and other products of the land, but also in terms of their strategic importance to our international relations.

Secretary Freeman has rendered a great public service in re-interpreting to our people the importance and interdependence of agriculture in our economy. As a result of his crusading effort, many Americans today understand and appreciate the fact that agricultural abundance and production potentials are assets of tremendous import to all Americans.

The question is, How can we enjoy fully and live comfortably with these great blessings that most of the peoples of the world are so painfully denied?

The second of these ingredients is the imperative necessity that we have public policies and programs consistently and realistically related to the agricultural and rural problems and opportunities as we know them today, and as they evolve over a period of time.

We thus must find some way to rationalize or balance output with market outlets at prices that are fair to both producers and consumers and at levels that will keep agriculture efficient and solvent.

Obviously, we must have a realistic and effective supply management program geared to our needs at home and abroad. It must maximize the wise use and conservation of our land and other material resources. It must provide for the ever-expanding recreational needs of a growing population.

A program to attain these objectives has been presented to the Congress by this Administration. It is now before the Congress and deserves the most careful and constructive consideration by our citizens throughout the country.

The cotton industry understands the importance of supply management or acreage controls in connection with price supports. The Department is earnestly seeking ways to make U.S. cotton more competitive and at the same time to safeguard the cotton grower.

One approach is a program which establishes a reasonable support price upon allotted acreage -- but which permits efficient producers to grow additional acreage at the world price.

The Department has been studying specific recommendations for such a program -- recommendations proposed by the legislative subcommittee of the Advisory Committee on Cotton.

The plan under consideration is a "blend price" program for cotton. It is designed to improve the competitive position of cotton and permit greater acreage-price flexibility for producers.

Our challenge is to manage our abundance in the long-range interest of the whole Nation.

We cannot afford to lose our pre-eminence and enviable position as the builders of the world's most efficient and productive agriculture. This is an invaluable asset at a critical juncture in history. I am sure you agree that we must face up to the urgent and challenging problems that confront our agriculture.

I believe we have the knowledge and the will to see that this industry continues to be progressive, dynamic, and productive. Let us all join together -- farm and non-farm people alike -- and resolutely march towards the promise of an even stronger and more stable agriculture that provides for the basic needs of us all in terms of food, clothing and shelter.

THE
LIBRARY OF THE
MUSEUM OF
ART AND
ARCHITECTURE
NEW YORK

